Волинський національний університет
імені Лесі Українки
Факультет іноземної філології
Кафедра іноземних мов природничо-математичних
спеціальностей

ENGLISH FOR MEDICAL STUDENTS

Англійська мова для студентів медичних спеціальностей

Методичні рекомендації

Луцьк 2022

УДК 811.111(072)Г 65

Рекомендовано до друку науково-методичною радою Волинського національного університету імені Лесі Українки (протокол № від 23. 02. 2022 р.)

Рецензенти:

Коваленко В. Г. – кандидат педагогічних наук, доцент кафедри іноземної та української філології Луцького національного технічного університету.

Семенюк А. А. – кандидат філологічних наук, доцент кафедри практики англійської мови Волинського національного університету ім. Лесі Українки.

Гончар К. Л., Тригуб Г. В., Хникіна О. О. English for Medical Students = Англійська мова для студентів медичних спеціальностей: метод. рекомендації. Луцьк, 2022. 225 с.

Методичні рекомендації “English for Medical Students” («Англійська мова для студентів медичних спеціальностей») призначені для підготовки студентів 1-2 курсів спеціальностей «Медицина», «Фізична терапія» та «Фармація. Промислова фармація» укладені відповідно до вимог робочих навчальних програм курсу «Іноземна мова за професійним спрямуванням» та «Англійська мова за професійним спрямуванням». Основною метою даного підручника є формування професійної іншомовної комунікативної компетентності, засвоєння граматичних структур та збагачення словникового запасу, для якісної та ефективної підготовки студентів медичних спеціальностей до медичного ліцензійного іспиту «КРОК».

Книга складається з п’яти змістових модулів, добірки текстів для самостійної роботи, глосарію з медичною термінологією. Кожний модуль включає тексти фахового орієнтування та комплекс вправ лексико-граматичного характеру на закріплення фахової лексики. Підручник написаний простою мовою, що робить подану в ньому інформацію доступнішою для вивчення. Оскільки структура розробки поєднує теоретичну та практичну частини, студенти мають можливість вивчати медичну термінологію в належному контексті систем та функцій людського організму як у здоровому стані, так і у стані захворювання. Розділ «Медикаменти та їх адміністрування» широко розкриває класифікацію ліків та їх використання на практиці майбутніми лікарями та фармацевтами.

Методичні рекомендації призначені для студентів-медиків, фармацевтів, а також для практикуючих лікарів у реальній медичній практиці.

УДК 811.111(072)
Г 65

CONTENTES

UNIT 1. PROFESSIONAL EDUCATION

1. 1. MEDICAL EDUCATION

Speaking

1. Are you a student of the Medical College/University/Academy?
2. What department do you study at?
4. What kind of classes do you have?
5. What subjects do you study this year? Is your higher school curriculum hard?
6. Do you get enough knowledge of medicine for your future work?
7. Are you going to be an outstanding scientist in medicine?

Active Vocabulary

1. finish/leave school	закінчити школу
2. enter the university	вступити до університету
3. graduate from the university	закінчити університет
4. attend lessons	відвідувати заняття
5. miss lessons	пропускати заняття
6. curriculum	навчальний план, курс навчання
7. timetable	розклад
8. subjects	навчальні предмети
9. acquire practical skills	набувати практичних навичок
10. master knowledge	оволодіти знаннями
11. syllabus	навчальна програма
12. fellow students	однокурсники
13. training course	курс навчання
14. teaching staff	викладацький склад
15. postgraduate courses	аспірантура
16. research work	науково-дослідницька робота

17. anatomy	анатомія
18. botany	ботаніка
19. histology	гістологія
20. education	освіта
21. function	функція
22. microbiology	мікробіологія
23. pharmacology	фармакологія
24. physiology	фізіологія

Exercise 1. Translate the words and word-combinations into English.

Стати лікарем, закінчити школу, вступити до медичного університету, навчальна установа, незалежне тестування, студент першого курсу, певна галузь медицини, практичні заняття та лекції, гістологія, відвідувати лекції, проводити експерименти, секційна кімната, базові (основні) навички, здобувати знання, практика, покращувати виконання, мати справу з пацієнтами.

Exercise 2. Make up the sentences using the words and word combinations below.

1. the Ukrainian Medical Academy /I / a first-year student / at present/ of / am.
2. a family doctor /I am going / to strengthen the health of the people / to be / and / to prevent different diseases.
3. practical classes / several / every day / medical students / or lectures / as / Anatomy, Histology, Chemistry, Physics, Biology, History of Medicine, Latin, English / have / in numerous theoretical and special subjects/ and others.
4. who really care for / every year / medicine / enter medical universities / and /many young people / become students.
5. go to / medical students / different laboratories where / carry out experiments and do practical work / they.
6. to be / if you should like / to work hard / qualified specialist / it is necessary / during the whole academic year.

Exercise 3. Read the texts about Ali and Bob.

A. Ali is a scientist. She comes from Cambridge in England but now she lives in Switzerland. She works three days a week at the Institute of Molecular Biology in Geneva. She speaks three languages: English, French, and German. She's married and has a daughter. She likes skiing in winter and going for walks in summer.

Bob is a doctor. He's English but now he lives in Australia in small town of Alice Springs. He isn't an ordinary doctor, he's a flying doctor. Every day, from 8 a.m. to 10 a.m. he speaks to people on his radio, then he flies to help them. He works 16 hours a day non-stop but he loves his job. He isn't married. He has no free time.

B. Complete the sentences about Ali and Bob.

1. She's a scientist. He _____a doctor.
2. Alison comes from England. Bob _____ _____ England, too.
3. She lives in a big city, but he ___ in a _____ town.
4. She _____ three days ____ ___. He _____ 16 hours a day.
5. He _____ to sick people on his radio. She _____ three languages.
6. She loves her job and he ____ _____ _____ , too.
7. She _____daughter. He _____ married.
8. She _____skiing and going ____walks in her free time. He never _____free time.

Exercise 4. Read and translate the following text paying attention to the highlighted words and word combinations. Put 10 questions to the text and be ready to answer them.

Text. I Study at the Medical College

At first let me introduce myself. My name is Olha Savchuk. I have **finished secondary school**. Now I am a student of the Medical College. I want to be a nurse. I will treat people and fight against different diseases.

My **fellow students** and I are second-year students. All of us **attend lectures** and **practical classes** regularly and never **miss** them. We do our home tasks at the **library** where we can use any textbook we need. The second-year **curriculum** includes many **subjects**. Anatomy is the most important subject this year. Our **timetable** includes four periods a day. During our practical studies we **carry out experiments** or tests in

different laboratories. Today it is very important **to study computer science** and to do all operations with it.

Some of my fellow students are members of **scientific circles**. They spend much time on **research work** and get to know more about medicine and its problems.

All my spare time I spend with my friends. We **go in for sports**, discuss many questions, go to the cinema and arrange evening parties. The student's life is interesting.

Exercise 5. Match the terms with their definitions.

1. rector	A. a detailed plan showing when events or activities will happen
2. dean	B. the subjects comprising a course of study in a school or college
3. senior lecturer	C. a student in the same school, university, college, etc. as you
4. internship	D. higher education after Bachelor's degree
5. faculty	E. instructor at University who has academic rank and is able to deliver lecturers and practical classes, take exams
6. lecturer	F. head of Medical Institution (Academy, University)
7. post-graduate education	G. head of faculty of University or Academy
8. curriculum	H. teaching and administrative staff at educational establishments
9. timetable	I. the period during which a person is an intern
10. fellow student	J. instructor at University who delivers lectures

Exercise 6. Fill in prepositions (of; with; in; from, up) where necessary.

I'm just finishing my first year _____ Medicine. What I like about this course is that you are involved _____ patients _____ the very beginning. Even our first year, we spend time _____ hospital. Much ___ the course is problem-based learning. We have two 2-hour sessions a week where we work _____ groups _____ eight _____ ten solving clinical problems. We decide together how to tackle the problem, look up books and online sources, make notes, and discuss case together. It is a great way _____ learning and getting to know the other students. _____ the past, medical students had lectures ____ the whole class taking notes _____ lectures _____ 9.00. to 5.00, but now it's mainly group work, although we do have some lectures and seminars, where we work _____ small groups _____ a tutor. I like all _____ it, even dissection, we get to cut _____ cadavers _____the second month _____the course."

Exercise 7. Translate the following sentences into Ukrainian.

Мене звати Софія Гапчук. Я навчаюсь на першому курсі медичної академії. Наші заняття розпочинаються о 8.30. Щодня ми маємо дві лекції і одне практичне заняття. Ми вивчаємо анатомію, фізіологію, біологію, гістологію та інші предмети. На лекціях я уважно слухаю лектора і конспектую новий матеріал. Найскладніший предмет для мене – анатомія, але я багато над ним працюю. Я хочу мати глибокі знання з багатьох спеціальних предметів. Це дуже важливо для моєї майбутньої роботи. Після занять я йду додому та трохи відпочиваю. Увечері я готуюся до практичних занять і читаю матеріал, необхідний для майбутньої лекції.

Part B.

MEDICAL EDUCATION IN UKRAINE

Exercise 8. Read and translate the following words:

Medicine, specialty, surgeon, pediatrician, therapeutist, prepare, last, Chemistry, Biology, Histology, subject, senior, acquire, treatment, disease, term, successfully, pass, qualified, outstanding, scientist, technician, Neurology, Urology, Pathologic Physiology, Ophthalmology.

Exercise 9. Read and translate the text:

UKRAINIAN MEDICAL STOMATOLOGICAL ACADEMY

I am a student of the Higher State Educational Establishment of Ukraine "Ukrainian Medical Stomatological Academy". Our Academy is situated in the center of our city. About 3.000 students study at the Academy. There are some faculties at our Academy: medical, stomatological, nursing, dental technician, grounding and post-graduate education. Medical faculty trains doctors of different specialties: family doctors, surgeons, pediatricians, therapeutists, gynaecologists and others. Stomatological faculty prepares stomatologists of different specialties. Doctors' training takes six years and stomatologists' training lasts five years.

During the first two years the students study Physics, Chemistry, Anatomy, Biology, Histology, History of Medicine, Latin, foreign languages and other pre-clinical subjects. Senior students study Therapy, Surgery, Obstetrics, Gynaecology, Ophthalmology, Dentistry and others. To make good progress in these and other subjects, medical students must work hard on them.

During the lectures we make notes of new and interesting facts and listen to the lecturer attentively. Sometimes we work in a laboratory. We know that we shall need deep knowledge in many subjects in our future work.

Our classes last till 4.50 p.m. A lesson lasts 90 minutes with a 5-minute break and 40-minute interval between lessons.

We have practical training at hospitals and polyclinics. Senior students acquire such practical skills, as to examine patients, to make a diagnosis, to prescribe proper treatment, and to fill in case histories.

The academic year starts in September and is over in June. It consists of two terms. Our teachers are very qualified. Several outstanding scientists work at our Academy. Their research works are well known in our country and abroad.

Exercise 10. Translate the following words and word-combinations into English:

Факультет; різні спеціальності; хірург; терапевт; стоматолог; підготовка лікарів; доклінічні предмети; готувати; тривати; практика; починати(ся); закінчувати(ся); навчальний рік; семестр; набувати; практичні навички; оглядати

пацієнтів; встановлювати діагноз; призначати необхідне лікування; заповнювати історії хвороби; лікувати; наукова робота.

Exercise 11. Answer the following questions:

1. Where do you study? 2. What year student are you? 3. How many students study at your Academy? 4. What faculties are there at the Academy? 5. What specialists does the medical faculty train? 6. What specialists does the stomatological faculty prepare? 7. How long does the training last at your Academy? 8. What subjects do you study? 9. How often do you take your credit tests? 10. How many terms does the academic year have? 11. What practical skills do the senior students acquire?

Exercise 12. Insert the necessary words or word-combinations:

1. About 3.000 students _____ at the Academy. 2. There are some _____ at our Medical Institute, they are: medical, stomatological, nursing, dental technician, grounding and post-graduate education. 3. Medical faculty _____ doctors of different specialties, such as:_____. 4. Stomatological faculty_____ stomatologists. 5. Doctors' _____ takes six years. 6. Stomatologists' training _____ five years. 7. During the first two years medical students study _____. 8. Senior students study _____. 9. We have _____ at the hospitals, clinics, and polyclinics. 10. Senior students _ practical skills, as to examine patients, to make a diagnosis, and to prescribe proper treatment. 11. The academic year _____two terms. 12. Several _____ scientists work at our University.

Exercise 13. Translate the following sentences into English:

1. Медичний факультет готує терапевтів, хірургів, гінекологів, офтальмологів та інших фахівців. 2. Підготовка лікарів триває шість років. 3. Стоматологічний факультет готує стоматологів. 4. Підготовка стоматологів триває п'ять років. 5. Студенти-медики проходять практику в лікарнях і поліклініках нашого міста. 6. Студенти-старшокурсники навчаються оглядати хворих, ставити діагноз і призначати лікування. 7. Навчальний рік складається з двох семестрів. Перший починається у вересні, а другий – в лютому.

Exercise 14. Complete the questions with the necessary words:

1. Why did you _____ medicine as your specialty? 2. How many students ____ at the Academy? 3. What faculty do you _____ at? 4. What _____ does your friend study at? 5. What specialists does the stomatological faculty _____? 6. What specialists does the medical faculty _____? 7. How many years does the doctors' training _____?

Exercise 15. Read and retell the following text:

MEDICAL UNIVERSITY

Our Medical University is one of the oldest Ukrainian medical schools, and one of the most prominent and respectful in the country and abroad. At present University is a very prestigious establishment, which provides the best medical education.

The University has been a leader in developing medical science and medical education. Today, at the beginning of the third millennium, the University is a large medical scientific, research and educational center, noted for its extensive clinical and laboratory base and a brilliant teaching staff. This staff has unique pedagogical experience in training students and postgraduates from all over the world and is always happy to pass on their knowledge and experience.

The University has broad international contacts in the field of education, medical science, health care, and economic activities. The diplomas of our University are recognized in many countries all over the world.

Annually about 4,000 students from Ukraine and foreign countries study at the University. There are three major faculties at University: medical faculty, pediatric faculty, and bio-medical faculty.

The plan of annual admission of first-year students is regularly fulfilled. The University offers the preparatory courses for foreign students where they study Ukrainian, Biology, Chemistry, and Physics.

After graduation from the University over 1.000 students are annually trained at the internship, clinical studies and take the postgraduate course.

The University students, postgraduates and interns, working for their academic degrees, are trained and get specialization, improve their knowledge and skills, carry out their theses at 74 chairs, 22 scientific-research laboratories of Medical University.

The University has large library with more than 40,000 volumes in Ukrainian and foreign languages.

The University has very close link with the practical medicine. The bases of University are 32 specialized clinics, hospitals and other preventive and medical institutions for more than 9,000 beds, where the future doctors get extensive probation under the supervision of the most experienced tutors.

Many prominent scientists of Ukraine are working at the Medical Faculty of the University. The glorious past of the University, deep pedagogical and scientific traditions, the importance of medical science and practice, and a wide range of qualified specialists, trained in the University, assure a leading role of our University.

Today Medical University is a complex of buildings designed for practical classes, lectures, laboratory studies, research work, and auxiliary services. All of the out-of-town students have been accommodated at the hostels. Students get medical assistance at a polyclinic staffed by doctors in all fields of medicine. Although studies are the most important in the students' life, attention is also paid to sport and entertainment. The University has sport complex, where students can attend sections of tennis, volleyball, etc.

Exercise 16. Read the following words and word-combinations:

Task; health; reason; personnel; important; Pharmaceutical Institute; pharmacist; last; curriculum; syllabus; approve; course; laboratory; practice; so-called; Chemistry; Anatomy; Biology; senior; Therapy; Surgery; Obstetrics; Gynaecology; acquire; sanitary epidemiological station; chemist's shop; diagnosis; intern; certain period; advanced specialist; engage; research; defend; thesis; candidate of science.

Exercise 17. Read the following text and translate it:

MEDICAL EDUCATION IN UKRAINE

The main task of medicine is the care about the people's health. For that reason the training of the medical personnel is very important. Medical Universities and Academies train future doctors, pharmacists, and stomatologists. Doctors' training takes six years but stomatologists' or pharmacists' training lasts five years. The curriculum and syllabuses for these Universities are approved by the Ministry of Public Health.

The main administrative unit of Medical University is the faculty. As a rule the Medical University or Academy may have one or more faculties (medical, stomatological, pharmaceutical and others), headed by the dean. He/She is responsible for administrative affairs of the faculty.

The training course consists of lectures, practical classes, practical work in laboratories and medical practice at different medical institutions. During the first two years the students of the Medical Universities have so-called pre-clinical training, which includes general subjects, as Physics, Chemistry, Anatomy, Biology and others. In the senior years they study clinical subjects, as Therapy, Surgery, Obstetrics, Gynecology and others.

The senior students acquire practical skills, working at hospitals, polyclinics, sanitary epidemiological stations, and chemist's shops. They acquire such practical skills, as to examine patients, to make a diagnosis, to prescribe proper treatment, and to fill in case histories. A lot of students participate in scientific societies; their dream is to become research workers in future.

Having passed the state examinations, young doctors begin to work as interns during a certain period. After graduation from the University they work as different specialists at the medical institutions.

The most advanced specialists are engaged in research. They defend theses and obtain degrees of candidates of science (medicine).

Exercise 18. Complete the following sentences.

1. There are some faculties at our Medical Academy such as _____
2. Senior students study such subjects as _____
3. During the third and fourth years of training students have practice at _____
4. They acquire such practical skills as _____
5. Teaching staff of Medical Academy is _____
6. The training course at Medical University contains _____
7. Student can take part in _____

Exercise 19. Put the words or word combinations in the correct order to make sentences. The first word in the sentence starts with a capital letter.

1. Training / takes / 6 years / of / doctors.

2. Anatomy / the most difficult / subject / at / is / Medical University.

3. During / the students / at / the third and fourth years / work / hospitals / obtain/ and / experience / practical.

4. Curriculum / are / syllabuses / and /approved / the Ministry of Public Health / by.

5. Annually / enter / 700 / our University / students / Ukraine / from / abroad / and.

6. She / took / at / postgraduate courses / the New York Medical School.

7. The lecturer / about / system / read a lecture / of / skeletal / the human body / yesterday.

Exercise 20. Translate the following words and word-combinations into English:

Піклування, турбота; готувати майбутніх лікарів; підготовка лікарів; тривати; включати; навчальна програма; бути затвердженим; набувати практичних навичок; заповнювати історію хвороби; державні іспити; протягом певного періоду; акушерство; хімія; хірургія; кандидат наук; інтерн; аптека.

Exercise 21. Complete the text with the words in the box:

syllabuses; prescribe; examine; training; case histories; is; senior; begin; consists of; learn; train.

The main task of medicine _____ the care about the people's health. Medical Universities ____ future doctors. Doctors' ____ takes six years. The curriculum and _____ for these Universities are approved by the Ministry of Public Health.

The training course _____ lectures, practical work in laboratories, and medical practice at different medical institutions. The medical students _____Physics, Chemistry, Anatomy, Biology, Therapy, Surgery, Obstetrics, Gynecology and others. The _____ students acquire such practical skills as to _____ patients, to make a diagnosis, to _____ proper treatment, and to fill in _____ . Having passed the state examinations, young doctors _____ to work as interns during a certain period.

Exercise 22. Answer the following questions:

1. What is the main task of medicine? 2. What Universities train future doctors and pharmacists? 3. How long does the doctors' training take? 4. What does the training

course consist of? 5. What kind of training do the students have during the first two years? 6. What subjects do they study during this period? 7. What subjects do the students study during the senior years? 8. Where do young specialists work after graduation? 9. What specialists are engaged in research?

Exercise 23. Translate the following sentences into English:

1. Я – студент медичної академії. 2. Курс підготовки триває шість років. 3. Протягом цього часу ми повинні отримати знання з багатьох медичних предметів, включаючи анатомію, фізіологію, медичну біологію, патологічну фізіологію, терапію, хірургію, гінекологію та ін. 4. Працюючи в лікарнях, студенти-медики вчаться оглядати хворих, встановлювати діагноз, призначати лікування і заповнювати історії хвороби пацієнтів. 5. Після закінчення медичного вишу студенти навчаються в інтернатурі протягом року або в клінічній ординатурі протягом двох років. 6. Медичний університет готує висококваліфікованих фахівців різних галузей. 7. Клінічні кафедри медичного факультету розташовані в обласних й міських лікувальних закладах нашого міста. 8. Кращі студенти медичного університету отримують стипендію. 9. У медичному університеті велика увага приділяється науково-дослідній роботі студентів. 10. Студенти беруть участь у науково-практичних конференціях в Україні та поза межами України.

Exercise 24. Make up a plan of the text "Medical Education in Ukraine".

Exercise 25. Tell the group about medical education in Ukraine keeping the following consistency: *The main task of medicine; Medical and Pharmaceutical Institutes; the course of training; preclinical and clinical training; practical skills; research work.*

Exercise 26. Read and translate the following text:

MEDICAL EDUCATION IN THE USA

In the USA Universities and medical colleges train doctors. The doctors' training takes from 8 to 13 years to become a doctor. The medical students have three or four years of pre-clinical training at the University. During this course students learn the basic subjects. They must have deep knowledge in Anatomy, Biology, Chemistry and others.

Medical students may work as nurses after pre-clinical training. Students who have made top grades are chosen candidates for a medical school or medical faculty of the University. This course lasts 4 years. At the time of the clinical training, students learn the basic sciences, such as Biological Chemistry, Pharmacology, Physiology, Pathologic Physiology and others. Besides, they have Psychology, which teaches the students to deal with patients. The students come in touch with patients in their third and fourth years. During this course, the students learn Anesthesiology, Dermatology, Internal Medicine, Surgery, Preventive Medicine, Pediatrics, Gynecology, Obstetrics and others. After graduation, they may improve their qualification at postgraduate or special courses. As a rule, after graduation from the University young doctors must work for 3-5 years under the supervision of experienced specialists in a certain field of medicine. After that they may work independently and have private practice.

In the USA there is a system of control and valuation of students' knowledge levels. The system of test is determined by means of test units. It is used for counting study hours, definition of academic progress and number of studied courses. For receiving the degree of Bachelor it is necessary to get 120-140 units during 4 years of study.

The most Universities are not state. They are private institutions. Each University has its own independent government and syllabuses. Medical education in the USA is very expensive and only the best students receive grants. The students pay additional fees for the using of laboratories, clinics and others.

Exercise 27. Answer the following questions:

1. What educational institutions train doctors in the USA? 2. How long does the doctors' training take in the USA? 3. What subjects do the medical students learn? 4. When do the students begin to work at the hospitals? 5. The most Universities are private institutions, aren't they? 7. What is their peculiarity in?

Exercise 28. Make up the sentences:

1. The clinical training / at the time of / learn / the medical students / Therapy, Pathologic Physiology, Pharmacology, Psychology and others.

2. The students learn / during the pre-clinical training / and others / Anatomy, Biology, Chemistry.

3. In their third and fourth years / the students / work / at the hospitals / and / get practical experience.

4. After pre-clinical training / may work / they / as nurses.

5. As interns/ must work /after graduation / they.

Exercise 29. Read and translate the following text:

MEDICAL EDUCATION IN THE UNITED KINGDOM

There are 16 Universities and the Royal College of Physicians that train doctors. The students have to pay for their training. The average pay is rather high. Advanced students who have high index in all the subjects may get grants.

The General Medical council is the governing body of the medical profession. But there is no standard curriculum for all medical colleges and faculties. Premedical training takes 3 to 4 years. A medical course lasts from 5 to 7 years at different colleges, for dentists it is 4 years. Only advanced students have the possibility to go in for research. In the United Kingdom many students have to pay for their study.

During the premedical course students study the main sciences: Chemistry, Physics, Biochemistry, Human Morphology, Physiology and others. Only those students who have good results in their pre-medical training can continue their education, the rest of the students can work as nurses.

During the senior years students work at hospitals and learn much of medical procedures and diseases to be well prepared for their work. As a rule, the students do not get appointments for work after graduation and make their own arrangements for work.

Exercise 30. Complete the following sentences:

1. During the pre-medical course the students study _____

2. Many senior students work _____

3. Only some students have the possibility _____ because many students have to pay for their study.

4. The students do not get appointments for work after _____ and make their own arrangements for work.

Exercise 31. Answer the questions:

1. What is the General Medical council? 2. How long does a medical course last? 3. Do the students have to pay for their training? 4. Is there a standard curriculum for all medical colleges and faculties? 5. Do the medical students receive grants? 6. What subjects do medical students study during the premedical course? 7. Do the students get appointments for work after graduation or do they make their own arrangements for work?

1.2. PHARMACEUTICAL EDUCATION

Speaking

1. Why have you made up your mind to become a pharmacist?
2. What jobs do you know in the pharmaceutical industry?
3. What does the profession of a pharmacist deal with?
4. Is this profession well-paid?
5. Does a person need to be skillful for this profession?

Active Vocabulary

1. to enter	вступати
2. course	курс
3. to last	тривати
4. property	властивість
5. internship	інтернатура
6. establishment	заклад, установа
7. master	магістр
8. abroad	за кордоном
9. evidence	доказ
10. standard	рівень
11. postgraduate	аспірант
12. applicant	абітурієнт
13. compulsory	обов’язковий
14. graduate	випускник

15. scientific	науковий

Exercise 1. Translate the following words into Ukrainian.

Institution, academy, examination, subject, physiology, chemistry, physics, laboratory, qualified, specialize, perfumery, cosmetic, assistant, faculty, specialist, problem, train, professional, pharmacognosy, pharmacokinetics, organize, doctor, professor, qualified, biology, botany, pharmacology, organic, toxicological, analytical, special, technology, pharmacy, management, marketing, department, period, pathology, mechanism, molecular, radiation, clinic.

Exercise 2. Match the words with the definitions.

1. abroad	a) to continue for a particular period of time
2. property	b) to start working in a particular field or organization or to start studying at school or university
3. standard	c) the level that is considered acceptable, or the level that someone or something has achieved
4. to last	d) an organization or institution, especially a business, shop, etc.
5. to enter	e) someone who is studying at a university to get a Master's Degree or a PhD (Doctor of Philosophy) Degree
6. curriculum	f) someone who has formally asked, usually in writing,

	for a job, university place, etc.
7. course	g) a job that someone, who has almost finished training as a doctor, does in a hospital
8. establishment	h) a period of study in a particular subject, especially at university
9. postgraduate	i) a quality or power that a substance, plant, etc. has
10. internship	j) all the courses given in a school, college, etc., or a particular course of study in one subject
11. applicant	k) a detailed study of a subject, especially in order to discover (new) information or reach a (new) understanding
12. medicine	l) any of the divisions or parts of esp. a school, university, business, or government
13. research	m) a substance, especially in the form of a liquid or a pill, that is a treatment for illness or injury
14. department	n) in or to foreign country

Exercise 3. Complete the following sentences using words from exercise 2 and translate these sentences into Ukrainian.

1. The committee is assessing the _____of care in local hospitals.
2. She works for international company and often goes _____on business.
3. People know many herbs with healing _____.
4. Practical classes in laboratories usually lasts for 90 minutes.
5. He’s worked hard _____a university. His dream to become a pharmacist.
6. She was one of ten _____ for the position of manager assistant in the Pharmaceutical company.
7. Practical training at chemist's shops usually _____ for six months.
8. The _____of compulsory education in Ukraine makes 9 years.
9. She knows a lot about herbal _____.
10. _____ students do research for their theses.
11. Students often conduct experiments to carry out their _____ .
12.There is an extramural _____at our university.
13. Profession oriented English is an essential part of the University _____.
14. She seems to have spent all her life studying in educational _____.

Exercise 4. Read and translate the text.

Pharmaceutical Education in Ukraine

In our country there is a wide network of institutions of higher medical education, which train pharmacists.

To enter a pharmaceutical faculty students take written entrance examinations **(External Independent Assessment Exams)** in Chemistry, Biology and Ukrainian. The course of study lasts for five years. During the first two years pharmacy students study general subjects, such as Botany, Physiology, General Chemistry, Physics, etc. During the third, fourth, and fifth years they have classes in special sciences, like Pharmacology, Pharmacognosy, Pharmaceutical Chemistry, etc.

The students also have practical classes in laboratories, where they study physical and medical properties of medicines. Pharmaceutical students have practical training at chemist's shops, where they learn to work as pharmacists.

After graduation all pharmaceutical students have a period of internship, which lasts for one year. Here they specialize in the following pharmaceutical specialties: "pharmacy", "clinical pharmacy", "technology of pharmaceutical preparations", and "technology of perfumery and cosmetic preparations".

Today about eight thousand foreign students study medicine and pharmacy at higher medical educational establishments of Ukraine. It is half of all foreign students that study in our country. About one thousand and seven hundred applicants from abroad enter Ukrainian medical universities and academies each year. This is the evidence of a high standard of medical and pharmaceutical education in our country.

At higher medical institutions of Ukraine there is also postgraduate study as a form of training scientific and teaching specialists. Postgraduate education is not compulsory. The students study and write thesis to get the Master's Degree or the Candidate of Science Degree.

After completing the course of study at the pharmaceutical faculty graduates can work as managers, assistants, dispensing pharmacists or chemists-analysts at chemist's shops, pharmaceutical plants or chemical laboratories.

Exercise 5. **Fill in the gaps with the words and word combinations from the list.**

the degree, take, specialize, higher medical institutions, completing, practical training, pharmaceutical plants, outlook, need, management, period of time, curriculum, influence

1. In our country there is a wide network of _____, which train pharmacists.

2. Pharmaceutical students have _____at chemist’s shops.

3. Students _____ in four pharmaceutical specialties.

4. Applicants _____ take written entrance exams in Chemistry, Biology and Ukrainian.

5. Postgraduate students get _____ of the Candidate of Science.

6. After _____ the course of study graduates can work as managers, assistants or dispensing pharmacists.

7. The urgent _____ for pharmaceutical specialists led to the organization of the faculty.

8. The faculty trains professionals for chemist's shops and _____.

9. The _____ at the faculty consists of general and special subjects.

10. For a relatively short _____ all the necessary scientific and research facilities were created at the faculty.

11. The NMU trains a new generation of pharmacists, with wide university _____and knowledge of clinical presentation and pathology of the human body.

12. They master the mechanisms of drug _____ on the body.

13. Senior students study _____ and marketing of pharmacy.

Exercise 6. Fill in prepositions where necessary.

1. Organization and economy … pharmacy is one of the subjects in the curriculum.
2. ... present there are nine chairs at the pharmaceutical faculty.
3. The course of study lasts … five years.
4. The curriculum at the faculty consists … many subjects.
5. The faculty trains students … different countries of the world.
6. The students master the mechanisms of drug influence … the body.
7. Radiation pharmacology is of primary significance … our country today.
8. During the third, fourth, and fifth years students have classes ... special sciences.
9. … graduation all pharmaceutical students have a period of internship, which lasts for one year.
10. Here students specialize … several pharmaceutical specialties.
11. Half … all the foreign students getting education in our country study medicine.
12. Nearly one thousand and seven hundred applicants ... abroad enter Ukrainian medical universities and academies each year.
13. This is the evidence ... a high standard of medical and pharmaceutical education in our country.

14.… higher medical institutions of Ukraine there is also postgraduate study as a form of training scientific and teaching specialists.

Exercise 7. Replace the underlined words with their synonyms.

various, broad, crucial, experts, continues, pharmacies, effect, opportunities, prepares, comparatively, medications, comprises, significant, views, learn, mandatory, establishments, drugs, level, finishing, directors, instruct, learn, qualities, training, drugstores, system, undergraduates, proof, pharmaceutists

1. The urgent need for specialists, who can solve the most important social problems of providing the people of Ukraine with medicines, led to the organization of the pharmaceutical faculty at our university.

2. The faculty trains professionals for chemist's shops, and pharmaceutical plants as well as scientists of different branches.

3.The curriculum at the faculty consists of many subjects.

4. For a relatively, short period of time all the necessary scientific and research facilities were created at the faculty.

5. The course of study lasts for five years.

6. The NMU trains a new generation of pharmacists, with wide university outlook and knowledge of clinical presentation and pathologies of the human body.

7. The students master the mechanisms of drug influence on the body.

8. There is a wide network of medical institutions, which train pharmacists.

9. During the first two years students study general subjects.

10. Students study physical and medical properties of medicines.

11. It is the evidence of a high standard of medical and pharmaceutical education in our country.

12. After completing the course of study graduates work as managers, assistants, dispensing pharmacists**.**

13. Pharmaceutical students have practical training at chemist's shops.

14. Postgraduate study is not compulsory.

Exercise 8. Match each word from column A with its opposite from column B.

A	B
1. to create	a) untrained
2. to organize	b) ordinary
3. qualified	c) inferior
4. to last	d) to destroy
5. outstanding	e) narrow
6. necessary	f) to stop
7. wide	g) to disorganize
8. primary	h) nonessential
9. to complete	i) to begin
10. to enter	j) low
11. to last	k) elective
12. practical	l) in our country
13. abroad	m) to leave
14. high	n) theoretical
15. compulsory	o) to relax
16. to work	p) to cease

Exercise 9. Say whether these statements are true or false. Make any corrections if necessary:

1. To enter a pharmaceutical faculty students take written entrance examinations (External Independent Assessment Exams) in English, Biology, and Ukrainian. **(T/F)**

2. During the first two years pharmacy students study special sciences, like Pharmacology, Pharmacognosy, Pharmaceutical Chemistry and others. **(T/F)**

3. The students have practical classes in laboratories, where they conduct experiments to study physical and medical properties of medicines. **(T/F)**

4. Pharmaceutical students often compound medicines at chemist's shops, where they learn to work as pharmacists. **(T/F)**

5. After graduation the most diligent pharmaceutical students have a period of internship, which lasts for one year. **(T/F)**

6. About two thousand foreign students study medicine and pharmacy at higher medical educational establishments of Ukraine**. (T/F)**

7. Postgraduate education is compulsory in Ukraine. Every student of pharmacy takes a postgraduate course to get the Master's Degree or the Candidate of Science Degree. **(T/F)**

8. After completing the course of study at the pharmaceutical faculty graduates can work only as dispensing pharmacists at chemist's shops. **(T/F)**

Exercise 10. Answer the following questions.

1. What higher medical institutions of our country train pharmacists?
2. What entrance exams do the applicants take?
3. Where do the students have practical training?
4. Where do the students have practical classes?
5. What is internship?
7. What pharmaceutical specialties do you know?
8. How many foreign students study medicine and pharmacy in Ukraine?
9. What is the evidence of a high standard of medical and pharmaceutical education in our country?
10. What is postgraduate study?
11. Where can graduates work after completing their study?

Part B

Exercise 11. Learn the following words:

to encompass	охоплювати
to undergo	переносити, зазнавати
apprenticeship	навчання (чомусь) у наставника
to extend	розширювати
arts	гуманітарні науки

obvious	очевидний
cognate	споріднений
advanced	поглиблений
to administer	приписувати (ліки)
to embrace	охоплювати
board	рада
to designate	призначати
to be engaged in	бути задіяним у
license	ліцензія
jurisprudence	юриспруденція
requirement	вимога; необхідна умова
dispensing	розповсюдження
merchandising	роздрібна торгівля
accounting	бухгалтерський облік
to permit	дозволяти

Exercise 12. Guess the meaning of the following words.

System, formal, college, instruction, leading, career, manufacturing, medication, effect, adequate, basic, specialized, business, profession, techniques, license, jurisprudence, practice, variation, specific, legal, registered.

Exercise 13. Match the words with the definitions.

1. apprenticeship	a) a group of people in an organization, who make rules and important decisions
2. to extend	b) to give someone a medicine or medical treatment
3. arts	c) studying a school subject at a difficult level

4. to administer	d) the subjects you can study that are not scientific, for example history, languages, etc.
5. to embrace	e) to continue for a longer period of time or to make something last longer
6. board	f) to choose someone or something for a particular job or purpose
7. to designate	g) work for an employer for a fixed period of time in order to learn a particular skill or job.
8. advanced learning	h) to include something as a part of a subject, discussion, etc.

Exercise 14. Read and translate the text.

Pharmaceutical Education in Great Britain

The history of pharmaceutical education has closely followed that of medical education. As the training of the physician underwent changes from the apprenticeship system to formal educational courses, so did the training of the pharmacist. The first pharmaceutical colleges in Great Britain were founded at the beginning of the nineteenth century.

The course of instruction leading to a degree in pharmacy was extended from four to five years in 1960. The first and frequently the second year of training, embracing general education subjects, are often provided by a school of arts and sciences. Many institutions, in addition, offer graduate courses in pharmacy and cognate sciences leading to the degrees of Master of Science and Doctor of Philosophy in pharmacy, pharmacology, or related disciplines. These advanced courses are intended especially for those, who are preparing for careers in research, manufacturing, or teaching in the field of pharmacy.

Several schools of pharmacy have now adopted a six-year professional course leading to the degree of Doctor of Pharmacy. This professional training includes many subjects common to the medical curriculum and involves training in hospital wards. In this service a professionally trained pharmacist is expected to give advice to the physician in the techniques of administering medication and possible interaction of drugs in the patient, along with expected side effects.

Since the treatment of the sick with drugs encompasses a wide field of knowledge in the biological and physical sciences, it is obvious that understanding of these sciences is necessary for adequate pharmaceutical training. The basic five-year curriculum in British colleges of pharmacy embraces physics, chemistry, biology, bacteriology, physiology, pharmacology, and many other specialized courses such as dispensing pharmacy. As the pharmacist is engaged in business as well, special training is provided in merchandising, accounting, computer techniques, and pharmaceutical jurisprudence. All other countries requiring licenses to practice offer the same basic curriculum with minor variations.

Before one is permitted to practice pharmacy in Great Britain as well as in other countries, in which a license is required, an applicant must be qualified by graduation from a recognized college of pharmacy, meet specific requirements for experience, and pass an examination conducted by a board of pharmacy appointed by the government. The passing of this board examination carries with it the legal right to practice pharmacy. The holder is then designated a registered or licensed pharmacist.

Exercise 15. Fill in the gaps with the words and word combinations from the list.

common,	***teaching,***	***followed,***	***encompasses,***
engaged,	***carries,***	***Doctor of Philosophy,***	***provided***

1. _____ the history of pharmaceutical education has closely _____ _____ that of medical education.

2. Many institutions, in addition, offer graduate courses leading to the degrees of Master of Science and _____.

3. These advanced courses are intended especially for those, who are preparing for careers in research, manufacturing, or _____ in the field of pharmacy.

4. This professional training includes many subjects _____ to the medical curriculum.

5. The treatment of the sick with drugs _____ a wide field of knowledge in biological and physical sciences.

6. The pharmacist is _____in business so special training is _____in merchandising, accounting, computer techniques, and pharmaceutical jurisprudence.

7. The passing of the board examination _____ with it the legal right to practice pharmacy.

Exercise 16. Fill in prepositions where necessary.

1. The training ... the pharmacist underwent changes from the apprenticeship system to formal educational courses.

2. The first pharmaceutical colleges in Great Britain were founded ... the beginning of the nineteenth century.

3. The first and frequently the second year of training are often provided ... a school of arts and sciences.

4. The course of instruction leading ... a degree in pharmacy was extended from four to five years in 1960.

5. The professional training involves practice ... hospital wards.

6. Before an applicant is permitted to practice pharmacy in Great Britain he must be qualified ... graduation ... a recognized college of pharmacy.

7. An applicant must meet specific requirements ... experience to be allowed to practice pharmacy.

Exercise 17. Replace the underlined words with their synonyms.

recommendation, commonly, including, supplied, prolonged, similar, required, probable, methods, patients, knowledge, comprises, evident, satisfactory, accepted

1. The course of instruction leading to a degree in pharmacy was extended from four to five years in 1960.

2. The first and frequently the second year of training, embracing general education subjects, are often provided by a school of arts and sciences.

3. Many institutions, in addition, offer graduate courses in pharmacy and cognate sciences leading to the degrees of Master of Science and Doctor of Philosophy in pharmacy, pharmacology, or related disciplines.

4. Several schools of pharmacy have now adopted a six-year professional course leading to the degree of Doctor of Pharmacy.

5. In this service the professionally trained pharmacist is expected to give advice to the physician in the techniques of administering medication and possible interaction of drugs in the patient, along with expected side effects.

6. Since the treatment of the sick with drugs encompasses a wide field of knowledge in the biological and physical sciences, it is obvious that understanding of these sciences is necessary for adequate pharmaceutical training.

Exercise 18. Match each word from column A with its opposite from column.

A	B
1. closely	a. unofficial
2. obvious	b. to deprive
3. formal	c. to reduce
4. to permit	d. unclear
5. to provide	e. remotely
6. to extend	f. general
7. to qualify	g. entrance
8. specific	h. to forbid
9. graduation	i. to disqualify

Exercise 19. Answer the following questions.

1. What changes did the training of the pharmacist undergo?
2. When were the first pharmaceutical colleges founded in Great Britain?
3. When was the course of instruction extended?
4. Which years of training are provided by a school of arts and sciences?

5. What additional graduate courses do many institutions offer?

6. What professional training includes medical subjects and training in hospital wards?

7. What is the professionally trained pharmacist expected to do?

8. What sciences does the basic five-year curriculum embrace?

9. What curriculum do other countries offer?

10. What is required to be permitted to practice pharmacy in Great Britain?

Exercise 20. Say whether these statements are true (T) or false (F). Make any corrections if necessary:

1. The history of pharmaceutical education is not connected with the history of medical education. **(T/F)**

2. A four-year instruction course was adopted in 1960. **(T/F)**

3. All pharmaceutical institutions offer courses leading to the degrees of Master of Science and Doctor of Philosophy. **(T/F)**

4. The compulsory professional course in pharmacy is 6 years. **(T/F)**

5. Different countries offer different curricula in pharmaceutical education. **(T/F)**

6. Before one is permitted to practice pharmacy in Great Britain he must pass an examination conducted by a board of pharmacy appointed by his college. **(T/F)**

Exercise 21. Fill in the words from the list, then make sentences using the completed phrases.

apprenticeship, advanced, cognate, hospital, related, adequate, side, pharmaceutical, legal, minor

1. _____ Europe
2. _____ countries
3. _____organizations
4. _____college
5. _____requirements
6. _____ pharmacists
7. _____care
8. _____ interests

9. _____ Hemisphere

Part C

Exercise 22. Read the words, then match them with their prefixes from the list below:

a) nature and living things *physio-;*

b) plant *phyto-*.

Phytochemistry, physical, phytobiology, physiology, phytochrome, phytogenesis, physiotherapy, phytogenetic, physics, phytogeography, phytohormone, physician, phytologist, physiopathology, phytoplank-ton, phytotoxic, physiognomy, phytopathology.

Exercise 23. Learn the following words:

to operate	діяти
accredited	акредитований
developed	розвинений
to grant	гарантувати
humanities	гуманітарні науки
bachelor	бакалавр
to seek	шукати
hemisphere	півкуля
emphasis	наголос
drugstore	аптека

Exercise 24. Match the words with the definitions.

a. to operate	1. to give something to someone or allow them to have something that they have asked for
b. accredited	2. subjects of study such as literature, history or arts, rather than science or mathematics
c. developed	3. to work
d.to grant	4. having an official approval to do something, especially because of having reached an acceptable
e. humanities	5. (of a country) one of the rich countries of the world with many industries and comfortable living for

f. bachelor	6. try to achieve or get something
g. drugstore	7. special attention or importance
h. to seek	8. a shop where you can buy medicines, cosmetics,
i. emphasis	9. the first university degree in an arts subject, a science subject, etc.
j. hemisphere	10. a half of the earth, especially one of the halves above and below the equator

Exercise 25. Translate the following sentences into Ukrainian.

1. He is going to study at an accredited language school in Europe.
2. Charity works with children in less developed countries.
3. The council have granted him permission to practice here.
4. Do you think the president will seek re-election?
5. There is a change of emphasis in government policy.
6. The course places emphasis on practical work.

Exercise 26. Read and translate the text.

Pharmaceutical Education in the USA

The first college of pharmacy was founded in the United States in 1821 and is now known as the Philadelphia College of Pharmacy and Science. Other institutes and colleges were established soon after in the United States, Great Britain, and continental Europe. Later, many universities organized schools and colleges of pharmacy within their courses of instruction. Colleges of pharmacy as independent organizations or as schools of universities now operate in most developed countries of the world.

To become a pharmacist in the United States, a person must graduate from an accredited college of pharmacy. After finishing this five-or six-year program, graduates must complete one year of internship under the supervision of a practicing pharmacist. Each state requires graduates to pass a state board examination before granting them a license to practice in the state.

There are more than seventy accredited colleges of pharmacy in the United States. Most of these colleges are part of a large university. Pharmacy students must take

courses in the biological sciences, chemistry, and mathematics, as well as in the humanities, to receive the bachelor's degree in pharmacy. They also must complete specialized professional courses. These courses include pharmacology, the study of the effects of drugs on living things, pharmaceutics, physical chemistry of drugs, clinical pharmacy, and the application of pharmaceutical sciences to patient care. A Master's or Doctor's degree is required for work in certain fields. Pharmacists may work in clinics, drugstores, hospitals, industrial plants, or research laboratories. They may also work for the military or government.

The American Pharmaceutical Association is a national organization of pharmacists in the United States. It was founded in 1852. The Association seeks to maintain high standards of practice among its members. It also embraces all pharmaceutical interests.

There are also other international societies, in which history, teaching, and military aspects of pharmacy are given special emphasis. Among them is the Pan American Pharmaceutical and Biochemical Federation, which includes pharmaceutical societies in various countries in the Western Hemisphere.

Exercise 27. Fill in the gaps with the words from the list.

accredited, seeks, established, hemisphere, required, developed, complete

1. _____ Pharmaceutical institutes and colleges were _____ in the United States, Great Britain, and continental Europe in the 19th century.

2. _____ Colleges of pharmacy now operate in most _____ countries of the world.

3. _____colleges of pharmacy train pharmacists in the United States.

4. Graduates are _____ to pass a state board examination to get a license to practice.

5. Students also must _____ specialized professional courses.

6. The American Pharmaceutical Association _____ to maintain high standards of practice among its members.

7. The Pan American Pharmaceutical and Biochemical Federation operates in the

Western _____.

Exercise 28. Fill in prepositions where necessary.

1. Many universities have schools and colleges of pharmacy ... their courses of instruction.

2. To become a pharmacist in the United States, a person must graduate ... an accredited college of pharmacy.

3. ... finishing the program, graduates must complete one year of internship .... the supervision of a practicing pharmacist.

4. Canada has similar with the US training requirements ... pharmacists.

5. Students study the effects of drugs ... living things.

6. Pharmacists may work ... the military or government.

7. The Pan American Pharmaceutical and Biochemical Federation is ... international societies, in which history, teaching, and military aspects of pharmacy are given special emphasis.

Exercise 29. Replace the underlined words with their synonyms.

states, every, Junction, permission, authorized, section, use, tries, level, separate, giving, influence, treatment

1. Colleges of pharmacy as <u>independent</u> organizations or as schools of universities now <u>operate</u> in most developed <u>countries</u> of the world.

2. To become a pharmacist in the United States, a person must graduate from an <u>accredited</u> college of pharmacy.

3. <u>Each</u> state requires graduates to pass a state board examination before <u>granting</u> them a <u>license</u> to practice in the state.

4. Most of these colleges are <u>part</u> of a large university.

5. These courses include pharmacology, the study of the <u>effects</u> of drugs on living things, and the application of pharmaceutical sciences to patient <u>care</u>.

6. The Association <u>seeks</u> to maintain high <u>standards</u> of practice among its members.

Exercise 30. Match each word from column A with its opposite from column B.

A	**B**

to finish	less
independent	to start
more	alike
to grant	indefinite
similar	different
certain	to refuse
various	controlled
living	dead

Exercise 31. Answer the following questions.

1. When was the first college of pharmacy founded in the United States?
2. What is its name today?
3. Where were other institutes and colleges established soon after?
4. What did many universities organize later?
5. What does each state require from graduates before granting them a license to practice in the state?
6. What specialized professional courses must the students complete?
7. Where may pharmacists work?
8. What is the American Pharmaceutical Association?
9. What other international societies do you know?

Exercise 32. Say whether these statements are true (T) or false (F). Make any corrections if necessary:

1. The first medical college was founded in the United States in 1821. **(T/F)**

2. Colleges of pharmacy as independent organizations or as schools of universities now operate in all developed countries of the world**. (T/F)**

3. To become a pharmacist in the United States, a person must graduate from an accredited medical college. **(T/F)**

4. Most colleges of pharmacy are independent institutions in the United States. **(T/F)**

5. Students are not required to complete specialized professional courses in pharmacology, pharmaceutics, clinical pharmacy, and the application of pharmaceutical sciences to patient care. **(T/F)**

6. The American Pharmaceutical Association is one of the international organizations of pharmacists. **(T/F)**

7. The Pan American Pharmaceutical and Biochemical Federation was founded in 1852. **(T/F)**

Exercise 33. Fill in the words from the list, then make sentences using the completed phrases.

(accredited, patient, continental, training, pharmaceutical, independent, western, developed, practicing)

10. _____ Europe
11. _____ countries
12. _____organizations
13. _____ college
14. _____requirements
15. _____ pharmacists
16. _____care
17. _____ interests
18. _____ Hemisphere

UNIT 2. MEDICAL CAREERS

PART 1. HOSPITAL STAFF AND DEPARTMENTS. AT THE DOCTOR'S

Speaking

1. Do you go for a regular check-up?

2. Do you usually make an appointment with your doctor?

3. When did you go for a physical examination last?

4. Describe you last visit to the doctor:

- What questions did the doctor ask?

- What symptoms were you developing?

- Did the nurse or the doctor take your vital signs: temperature, pulse, blood pressure, rate of breathing, etc.?

- Did the doctor refer you to any other medical specialist?

- Did the doctor give you prescriptions for any medications?

- Did the doctor recommend you to have any tests taken?

- Did the doctor's recommendations help you?

Active Vocabulary

complaints	скарги
symptoms	симптоми
vital signs	життєво-важливі ознаки
to have complications	мати ускладнення
side effects	побічні ефекти
to take medicine	приймати ліки
to write out a prescription for medication	виписати рецепт на ліки
registry (reception area)	реєстратура
physician	лікар

to make an appointment with a doctor	записатись на прийом до лікаря
fever	гарячка, висока температура
therapeutist	терапевт
internal medicine	терапія
diagnosis	діагноз
injection	ін’єкція
to prescribe	призначати, приписувати
inpatient	стаціонарний, стаціонарний хворий
outpatient	амбулаторний, амбулаторний хворий
a sore throat	біль у горлі
cough	кашель
to sneeze	чихати
to wheeze	хрипіти
to refer to a specialist	звернутися до спеціаліста
referral	направлення до спеціаліста
to admit to a hospital	госпіталізувати
to discharge from a hospital	виписати з лікарні
ward round	обхід палат
runny nose	нежить
clogged (blocked) nose	закладений ніс
wound	рана
injury	травма
suture	шов
rash	висип

dressing	перев’язка
swelling	набряк
first aid station	станція першої допомоги
emergency	відділення невідкладної допомоги
ambulance	швидка допомога

Special Terms:

Illness	**Disease**	**Condition**
Illness is a disease of the body and mind, or the condition of being ill	*Disease* is a particular kind of illness, especially one that spreads from one person to another or affects a particular part of your body, e.g. infectious *diseases*, heart *disease*	1. *Condition* is an illness or health problem that affects you permanently or for a very long time; *heart/lung/skin conditions suffer from condition* 2. how healthy or fit you are: *in a critical/stable/satisfactory condition physical/mental condition*
Illness is more often used to refer to the length of time or state of being unwell	*Disease* can also be used to mean a lot of different *diseases.* Cigarette smoking can cause death and *disease.*	

Do not use *illness* to talk about less serios problems such as headaches or colds	**Common collocations:** to catch a *disease* = to contract a *disease;* a *disease* spreads, heart/liver/brain *disease*, a cure for a *disease.*	
Common collocations: through *illness* (because of an *illness*); to recover from an *illness*		
Both can be used in the following collocations: to have / to suffer from a disease /an illness the symptoms of a disease/an illness		

Exercise 1. Read and translate the text. Pay attention to the active vocabulary. Make up sentences of your own with the highlighted words and word-combinations. Retell the text.

MY LAST VISIT TO THE DOCTOR

I was **feeling** a little **unwell** the other day, so I decided to visit my doctor before things get worse. I called her in the morning, and **made an appointment** for 9.30 a.m. When I arrived at her office, I had to **fill in** some **insurance form** and a questionnaire asking about my **current and past medical condition** along with the **symptoms** I was developing. After a few minutes, the receptionist called my name and took me back to one of their **examination rooms**. She **took** my **vital signs** including my **temperature and blood pressure** and then I waited until the doctor came in. After looking me over and asking a few questions, the doctor's **diagnosis** was that I had a **bacterial infection.**

She **wrote me out a prescription** for some medication, which I was supposed to take two times a day. I asked her if there were any **side effects** to taking that medicine as I didn't want **to run the risk of having complications**. The doctor assured me that the drug she prescribed would help me feel better and not **make my condition worse**. After that I went back to the **reception area** and got my prescription.

Exercise 2. Decide whether these are signs or symptoms. Some may be both. Complete the following table. ***Signs are what the doctor finds during examination of a patient (raised pulse, fever, etc.). Symptoms are what a patient reports to the doctor.***

blocked nose, wheeze, itching, rash, stomachache, bruising, nausea, loss of appetite, runny nose, diarrhea, abdominal pain, coughing, breathlessness, dehydration, high blood pressure, constipation, vomiting, tight chest, a sore throat, burning on urination

Signs	***Symptoms***	***Both***

Exercise 3. Use the verbs below to complete the following collocations.

take	**give**	**make**	**listen to**	**have**

1._____ you an injection.
2. _____ you blood pressure.
3. _____ your chest.
4. _____ your temperature.
5. _____ your pulse.
6. _____ you a prescription.
7. _____ you a check-up.
8. _____ you a diagnosis.
9. _____ a blood sample.
10. _____ an appointment with a doctor.

Exercise 4. Read the text and translate it.

AT THE DOCTOR'S

If we catch cold, we feel a splitting headache, have a clogged nose, cough, run a high temperature, we must go to the polyclinic. First, we come to the registry. The register on duty asks the name, address, age and occupation. He writes out some slips (referrals), because several specialists will examine us. Some of them will listen to our heart and lungs, some will check our kidneys, liver, stomach, eyesight, hearing. The others will conduct our blood tests, our blood pressure and X-ray us.

Our district doctor sees his patients in the consulting room No. 4. A nurse gives us a thermometer to take our temperature. We must keep it under an armpit. Last time my temperature| was 37.9°C. The doctor asked what my trouble was. He offered to sit down in a chai strip to the waist. He felt my pulse. It was faint and accelerated. Then I lay on the examination couch, and the doctor palpated my abdomen. He asked me from what diseases 1 suffered in my childhood. I suffered from scarlet fever (measles, chicken pox). At that moment I felt dizzy and was damp with sweat. The doctor filled in my card and diagnosed the case as the flu.

Then he wrote out a prescription for some medicine: pills, powder, drops, mixture. He also advised me to take a scalding foot bath, to put a hot water bottle on mv feet, to have a hot tea with raspberry jam. That would keep my fever down. The results of my X-ray examination and blood analysis were normal. I had the prescription made at the chemist's. I followed the prescribed treatment to avoid complications. Every day I took a tablespoonful of mixture 3 times a day and some pills. In two days I was better and in a week I recovered from my illness. I began to take a good care of myself. Now I go in for sports because sports make us strong, healthy and cheerful. Every day I do my morning exercises and have a cold rubdown to prevent myself from catching cold. There is a good proverb: *An apple a day keeps the doctor away.* That's why I eat a lot of fruit and vegetables.

In cause of a sudden and severe illness or an accident, calls are made to the first aid station. There doctors are on duty all day round. There are many ambulances there equipped with everything necessary to render first aid. They have all kinds of medicine, stretchers, radio equipment. A patient is transported to the hospital without delay.

There he is taken to the reception ward first. After careful questioning and examination the doctor fills in the patient's case history. Then a patient is given special clothes and is put to a ward for treatment. The doctors make their daily round there. They examine patients and prescribe different treatments. The nurses take the patients' temperature, give injections, apply cups and mustard plasters, give medicine.

When a patient is completely cured, he is discharged from the hospital. There are different departments in the hospital. They are: surgical department, therapy, the department of infectious diseases, etc.

The problem of health service has become one of the greatest concerns of the government. It's necessary to expose the disease before it has taken root, to nip the disease in the bud. Periodic medical examination at schools, plants, factories helps to do it. If a person is ill, he can take a sick-leave paid at the government's expense. Trade unions provide sanatoriums, health resorts, rest houses, summer camps. The aim of medical service is to achieve lower mortality rate.

Exercise 5. Make the plan of the text "At the Doctor's". Retell the text.

Exercise 6. Give one word for the following.

1. A person who makes patients' appointments with a doctor.
2. A piece of paper which specifies the medicine for curing your illness.
3. A place where patients come for the check-up.
4. A pre-arranged time for somebody to come.
5. A paid number of days given to you by your office when you are ill.
6. A sick person who is treated by a local physician.
7. A sort of medicine which can cure you of cold.
8. A pain in your head which you have felt for a long time.
9. Not long ago.
10. To make a sick person healthy again.
11. That which promises a lot.

Exercise 7. Answer the questions.

1.What should you do if a) you feel feverish; b) you are susceptible to drugs; c) your brother / sister is running high temperature; d) you have a very bad headache.

2. What should a doctor do to diagnose you? How can you arrange for a doctor's visit to you?

3. Which do you prefer: to go to the local out-patient clinic or to send for a doctor?

4. What should you do with those prescriptions that the doctor has written out for you?

5. How long is your sick-leave?

6. What can you cure your running nose with?

Exercise 8. Paraphrase the italicized phrases.

1.The cough *became very bad.*

2. I think she's *running a high temperature*.

3. She said she was *feeling sick.*

4. I *phoned up on local doctor's office* and asked them to arrange for my check up.

5.You should *do whatever the doctors tell you.*

6. Everybody said that you *looked very healthy.*

7. The doctor *told me I should take the medicine* so that I *would get better*.

8. They *checked her blood pressure*.

Exercise 9. Complete the sentences.

1. On Saturday I went out without my warm coat on and now … .

2. The doctor took the patient's temperature and said ….

3. I can hardly breathe because ….

4. When she came home she complained of a headache and her mother … .

5. It hurts me when I swallow ….

6. This medicine will work wonders if … .

7. If you follow all doctor's instructions you'll … .

8. She looks unwell because … .

9. She looks a picture of health … .

10. She is loosing weight ….

Exercise10. Complete the sentences using a word from the box for each blank.

alleviate; antibiotics; blood; breakdown; care; consciousness; cure; discharged; flu; illness; infectious; migraine; perform; prescription; recovery; respond; runny; through; upset; wear

1. The Red Cross has urged the population to give _____whenever possible.

2. Dr Jones was the best surgeon able to _____such a difficult operation.

3. If you're on _____ you shouldn't drink any alcohol.

4. Take aspirin three times a day. It will help _____ the pain.

5. After being treated for over three weeks, he was _____ from hospital yesterday.

6. Doctors in developing countries often don't have enough supplies to treat severe _____.

7. The patient hasn't regained _____ yet, so we'll have to wait and see what happens next.

8. Everyone in the family has gone down with the _____.

9. The injury was pretty bad, but the doctors expect him to make a full _____.

10. Many patients don't _____ to such an aggressive treatment.

11. The disease was highly _____, so they put everyone into quarantine.

12. When the painkillers start to _____ off, you'll feel soreness back.

13. This is the second nervous _____ she's had this year.

14. Dad got an _____ stomach because he probably ate some spoilt food.

15. Up to now, research hasn't found a _____ for the disease.

16. I got the _____ from my doctor, so I went to the next pharmacy to get the pills.

17. She's only got a _____nose and a sore throat, otherwise she's OK.

18. Her situation was so critical that she had to spend a few days in intensive _____.

19. She suffers from _____, especially when the weather changes a lot.

20. Although the patient is still in critical condition the doctors expect him to pull _____.

Exercise 11. Match the parts of the table to get correct information on the main methods of examination:

			How to use this method		**When to use this method**
1	**Inspection**	A	During this kind of examination, the examiner places one hand on the patient and then taps a finger on that hand, with the index finger[1] of the other hand	1	Vibrations can help the physician to determine if various organs (heart, liver, etc.) are enlarged or not, as well as to diagnose fluid in the abdominal and chest cavities[2] or make one suspect the presence of pneumonia
2	**Palpation**	B	During this kind of examination, the physician looks at different parts of the patient's body	2	This technique can diagnose such conditions as heart failure[3], accumulation of fluid, asthma, bronchitis, pneumonia, collapsed lungs, etc.

3	**Percussion**	C	During this kind of examination, the physician listens to the patient's heart, lungs and blood vessels	3	The physician can feel the heart beat and diagnose enlargement, find the tenderness[4] of an active ulcer, or diagnose the presence of edema[5] or excess fluid
4	**Auscultation**	D	During this kind of examination, the physician presses his fingers or hands to the surface of the patient's body	4	A characteristic growth on the eyelids[6] could point to a high cholesterol level that is a risk factor for coronary artery disease. A bluish discoloration of the tongue and nail beds could point to a low oxygen level in the blood, while pallor[7] or a pale appearance could indicate a low level of hemoglobin

Exercise 12. Fill in the missing words to get information on the diseases. Choose from the following:

temperatures; heart; blood; back; taking; chest; lasts; discomfort; exertion; relieve; pain

Angina pectoris is the medical term used to describe the temporary chest ___ that occurs when the ___ is not getting enough blood. When the heart does not get enough ___, it can no longer function at its full capacity. When physical ___, strong emotions, extreme ___, or eating increase the demand on the heart, a person with angina feels temporary ___, pressure, fullness, or squeezing in the center of the ___ or in the neck, shoulder, jaw, upper arm, or upper ___. You can ___ the discomfort by removing the stressor and/or ___ sublingual (under the tongue) nitroglycerin. The discomfort of angina ___ a few seconds or minutes.

flu; lung; disease; admitted; breathing; infection; blood; ill; cold; cause

Pneumonia is a ___ infection that can make you cough, sometimes with mucus or even ___, run a fever, and have a hard time ___. For most people, pneumonia can be treated at home. It often clears up in 2 to 3 weeks. But older adults, babies, and people with other diseases can become very ___. They may need to be ___ to hospital. Bacteria or viruses usually ___ pneumonia. You may get the disease after having a ___ or the ___. These illnesses make it hard for your lungs to fight ___, so it is easier to get pneumonia. Having a long-term, or chronic ___ like asthma, heart disease, cancer, or diabetes also makes you more likely to get pneumonia.

headache; tonsil; complains; tender; complication; abscess; pain; swallowing

Quinsy, or peritonsillar abscess (PTA), is a recognized ___ of tonsillitis and consists of a collection of pus beside the ___. Symptoms start appearing two to eight days before the formation of an ___. The patient ___ of a sore throat and pain on ___. As the abscess develops, the condition is worsened by fever, malaise, ___ and changes in the voice. Neck pain associated with ___, swollen lymph nodes, ear ___ and halitosis are also common.

causes; stomach; abdomen; complication; drugs; doctor; pain; blood; irritate; advice; improve

Stomach ulcers, also known as gastric ulcers, are open sores that develop on the lining of the ___. The most common symptom of a stomach ulcer is a burning or pain in the centre of the ___. You should always visit your ___ if you suspect you have a stomach ulcer. Seek urgent medical ___ if you experience any of the following symptoms: vomiting ___, passing black stools, a sudden, sharp ___ in your stomach that gets steadily worse and does not ___. These could be a sign of a ___, such as internal bleeding. There are two main ___ of stomach ulcers: Helicobacter pylori (H. pylori) bacteria, which can ___ the stomach or upper intestine lining, causing an ulcer to form, and non-steroidal anti-inflammatory ___ (NSAIDs), such as ibuprofen or aspirin, which can have a similar effect.

Exercise 13. Read the dialogue and act it out with your fellow student.

- Good afternoon, doctor!
- Good afternoon. Sit down, please. What's troubling you? Where is the pain?
- I am quite unwell. I feel giddy. My nose is running. I have a splitting headache, a sore throat and a cough.
- What is your temperature?

-1 was running a very high temperature yesterday. But today I haven't taken it.

- Take the thermometer, please, and put it under your armpit. What infectious diseases have you suffered from?
- I've had measles, mumps, chicken pox and pneumonia.
- Well, now give me the thermometer... 38.5. It's rather high. Let me feel your pulse... Now strip to the waist, please. I'll listen to your heart and lungs. Please, take a deep breath. Breathe deeply... Now hold your breath... Now cough... That will do. Do you feel a little pain in your heart?
- A little bit.

You have cardiac murmur. Do you do morning exercises?

- No, I don't.
- Well, you should, and have a cold rubdown every morning. That will keep catching colds. Then eat lots of fruit. Drink hot tea with lemon or raspberry jam. 1 al, you to put a hot water bottle under your feet and try a scalding foot bath. Apply mustard

plasters on your back. Here is a prescription for medicine. You'll have it made at the chemist's.

- Thank you ever so much, doctor. Good-bye.

Exercise 14. Match medical problems with the specialists they deal with.

1. You need glasses.	a) dietician
2. You are very depressed.	b) cardiologist
3. You have arthritis.	c) optician
4. You hurt your shoulder playing tennis.	d) psychotherapist
5. You are overweight.	e) chiropodist
6. You have ingrown toenails.	f) gynecologist
7. You are trying to have a baby.	g) rheumatologist
8. Your two-year-old son is not well.	i) endocrinologist
9. Your grandma is keeping high blood pressure.	h) pediatrician
10. My recent tests showed high blood sugar levels.	j) physiotherapist

Exercise 15. (A). Write down unknown words from the text below into your vocabulary and learn them by heart. Complete the text.

In Ukraine the most hospitals are the general ones which deal with many kinds of _____ and injuries. Each hospital department is intended for patients with similar diseases. There are some _____ in any regional hospital in Ukraine, they are: surgical, cardiological, oncological, gastroenterological, _____, and other departments. In the hospital the doctors make the ward round, _____ the patients, listen to the heart and lungs, palpate the abdominal parts, feel the pulse, measure blood pressure, _____ the diagnosis and prescribe proper treatment. In the surgical department there are patients suffering from such surgical diseases as , _____, hernia, cholecystitis, gastric and duodenal ulcers and others. The surgeons _____ such operations as appendectomy, vagotomy, stomach resection, cholecystectomy, operations on the thorax and thoracic organs. The operations are

performed under general or _____ anesthesia. After operation the nurse _____the patient's temperature, dresses the wounds, gives _____, and fulfills the doctor's prescriptions. The cardiological department deals with the emergency _____ of patients with unstable angina pectoris, acute myocardial infarction and provides successful treatment of patients with myocarditis, pericarditis, _____, complicated forms of arterial hypertension and other _____ diseases. All technical achievements in cardiology are used to diagnose and

cardiovascular system diseases. The patients complain of chest discomfort, heart troubles, sensation of heaviness, breathlessness, _____ and others. In the _____ department there are patients with diseases of respiratory system. They suffer from bronchitis, asthma and others. The patients have a bad cough, high temperature, and headache. In the gastroenterological department there are patients with liver cirrhosis, _____, chronic cholecystitis, pancreatitis, chronic hepatitis, intestinal dysbacteriosis and some others. The patients with diseases of gastrointestinal tract feel a pain in the _____, weakness, and sometimes they have nausea and vomiting. The doctors use different _____ of treatment using modern medicines, tools and devices (e.g. ultrasound scan, arteriography, X-ray) for treatment of these patients.

(B). Put 5-8 questions to the text above. Make up a short dialogue based on the text.

Exercise 16. Match each specialist with their duties (what they deal with) and speak about them as in the example.

Example: *An otolaryngologist (ENT specialist) is a doctor who treats ear, nose and throat diseases.*

1. a urologist	a) prevents pain during surgery
2. an oncologist	b) treats babies and children
3. a pathologist	c) treats skin problems
4. a geriatrician	d) specializes in digestive diseases or disorders
5. an obstetrician	e) treats eye diseases

6. an allergist	f) deals with malignant diseases and tumors
7. a cardiologist	g) deals with the birth of children
8. a gastroenterologist	h) specializes in nervous diseases
9. an endocrinologist	i) treats mental illnesses by discussing patients' problems rather than giving drugs
10. an anesthesiologist	j) specializes in diseases of the urinary organs in females and the urinary tract and sex organs in males
11. a psychiatrist	k) treats people with mental illnesses through medication
12. a psychotherapist	l) specializes in the diagnosis and management of hormonal conditions
13. a pediatrician	m) treats heart diseases
14. a dermatologist	n) determines food and environmental allergies
15. a neurologist	o) specializes in diseases of elderly patients
16. an ophthalmologist	p) specialists who study the cause of disease and the ways in which diseases affect our bodies by examining changes in the tissues and in blood and other body fluids

Exercise 17. (A) Read and translate the text. Put 10-15 questions about the text.

MAJOR MEDICAL SPECIALTY FIELDS

Allergy and Immunology deal with disorders of the immune system, including allergies, autoimmune diseases, and immune deficiencies.

Anesthesiology is the study of anesthesia and anesthetic. Anesthesiologists give anesthetics during operations or supervise the administration of these drugs.

Cardiology is the diagnosis and treatment of disorders of the heart.

Colon and rectal surgery is the surgical treatment of disorders of the lower digestive tract.

Dermatology diagnoses and treats diseases of the skin, nails, and hair.

Emergency medicine deals with the immediate recognition and treatment of acute injuries, illnesses, and emotional crises.

Family practice is the supervision of the total health care of patients and their families, regardless of age.

Neurological surgery, or neurosurgery, is the surgical treatment of disorders of the nervous system.

Oncology is the study of tumors.

Ophthalmology is the diagnosis, treatment and prevention of eye diseases.

Orthopedics is the diagnosis and treatment of disorders of the skeletal and muscular systems.

Pathology is the study of changes in the body that cause disease or are cause by disease.

Pediatrics is the diagnosis, treatment and prevention of children's diseases.

Radiology is the use of X-rays and radium to diagnose and treat disease.

Thoracic surgery is the surgical treatment of diseases of the heart, lungs or large blood vessels in the chest.

Urology deals with diseases of the organs that pass the urine and of the male reproductive organs.

Otolaryngology diagnoses and treats ear, nose, and throat diseases.

(B) Answer what departments there are at your district hospital.

Exercise 18. Complete the following table.

Department	Specialists	Diseases

Exercise 19. Add job titles of the people to the sentences below. You can use singular or plural nouns.

practice manager; receptionist; general practitioner, midwife, district nurse; health visitor; practice nurse

1. A practice is run by _____.
2. _____ work with individuals, families and groups like the elderly and new-born babies in the community.
3. _____ need very good interpersonal skills because they are the first contact people have with the practice.
4. Ninety-seven percent of the UK population is registered with a _____.
5. The duties of a _____ include “traditional” nursing skills and running specialist clinics for immunization, diabetes, and so on.
6. An important link between hospitals, GPs, and other health professionals involved in antenatal care is the _____.
7. _____ visit those who are housebound or those-recently discharged from hospital and / or dress wounds.

Exercise 20. Match medical jobs with the correct definitions.

1. a nurse	a. a doctor who specializes in one area of medical treatment, e.g. an eye
2. a general practitioner	b. a person, usually a woman, to advise pregnant who has been trained to advise pregnant women and to help them when they are giving birth

3. a specialist (a specialist registrar)	c. a senior house officer who is in the second year of postgraduate training
4. a midwife	d. a high-ranking and very respected hospital doctor who gives specialist advice in one particular area of medicine
5. a home help	e. a nurse, employed by the local authority, who visits and treats people in their own home
6. a pharmacist	f. a newly graduated doctor in the first year of postgraduate training (junior doctor)
7. a consultant	g. a fully qualified specialist
8. a matron	h. a person who is employed by the medical and social services to help people who are old or ill with their cleaning, cooking, shopping etc.
9. a health visitor	i. a person who is responsible for all of the medical staff
10. student nurse	j. a doctor trained in a general medicine, who treats people in a certain local area for all kinds of illnesses. He or she is usually the first doctor people go to when they are ill.
11. district nurse	k. the woman in charge of the nurses in a hospital
12. Foundation Year 1 doctor (FY1)	l. a person who looks after patients in hospital
13. Foundation Year 2 doctor (FY2)	m. a nurse who is still training
14. medical director	n. a person who is qualified to prepare and sell medicines

Exercise 21. Read and translate the text.

IT'S MY JOB

My name is Dr. Franco Carulli. I'm newly qualified. I work as a junior doctor at Alderbay General Hospital as a part of medical team ("firm"). I work with two other junior doctors also in the first year of postgraduate training. Our main aim is to learn as much as possible from our seniors. The first people we turn to are the two doctors in the second year of training. They supervise any practical procedures we do and are available to help us when we have problems.

Above these senior doctors there are specialist registrars. They are usually in charge of daily ward rounds. They also work in outpatient clinics, deal with inpatient referrals, teach and undertake procedures and operations. They give us instructions about what investigations need to be performed. Specialist registrars are training posts for the next grade up, consultant level. They can be bleeped at any time if we need advice or to refer a patient. If nobody at these two levels is available, we refer to the consultants who are responsible for our posts.

We see each consultant when they do their weekly ward rounds, once on a Wednesday and the other on a Friday morning. These rounds are the most tense and hectic times each week, as we have to make sure all the patient records are up-to-date and present patients to the consultant. In addition to doctors at all levels of the firm, there may be a nurse present, as well as undergraduate students and doctors doing clinical attachments.

My job also involves a wide range of duties from clerking patients, keeping the patient list in order, requesting investigations and making sure the results are received and referring and liaising with specialists as a part of multidisciplinary team, doing practical procedure, administrative tasks like rewriting drug charts, and doing TTOs.

We have to keep our knowledge up-to-date through training from our seniors and keep a log or record of all the special procedures we learn and cases we see. We also have to find time for learning to present case to our peers and other colleagues. I also find time to talk to the patients and their families.

B. Find in the text:

1. the name given to a medical team;
2. who supervises the practical procedures junior doctors perform;
3. who leads the daily ward rounds;
4. who deals with the patient referral;
5. who leads the weekly ward rounds;
6. when the busiest time of the week is;
7. who rewrites the drug charts.

C. Find out what TTO is.

D. Speak on the duties of all groups of the medical staff in a British hospital.

E. Answer the question: How does hospital training of doctors in your country differ from the British system?

2.2. PROFESSION OF THE PHARMACIST. AT THE CHEMIST.

Speaking

1. Why do pharmaceutical students need extensive education?
2. How do pharmacists become qualified in their field?
3. What do pharmacists do? What are their responsibilities?

Active Vocabulary:

1. Pharmacist (pharmaceutist, chemist, druggist)	аптекар
2. pharmaceutical to work for pharmaceutical company	фармацевтичний працювати в фармацевтичній компанії
3. pharmacy (drugstore; chemistry)	аптека
4. to dispense	видавати

5. to prescribe	виписувати
6. prescription on prescription	рецепт по рецепту
7. drugs (medicine; medication)	ліки
8. healthcare professional	медичний працівник
9. to explain to smb.	пояснювати комусь
10. over–the-counter products	ліки (продукція), що продаються без рецепту
11. illness (disease)	хвороба
12. to be successful at	бути успішним (в)
13. to avoid (interaction; overmedication)	уникати (взаємодії; передозування);
14. to earn a (Bachelor; Master; scientific) degree	здобувати (бакалавра; магістра; науковий) ступінь
15. earn money; to earn smb's life	заробляти гроші; заробляти на прожиття
16. requirements	вимоги
17. occupation (career; profession)	професія
18. to complete	завершувати
19. to employ; employer; employee	наймати на роботу; роботодавець; працівник
20. to distribute	поширювати, розповсюджувати
21. dosage	дозування
22. to ensure	забезпечувати, запевняти
23. side effect	побічний ефект
24. to deliver	доставляти
25. responsibility	відповідальність;

to be responsible for smth	бути відповідальним за щось
26. to increase to decrease	підвищувати; збільшувати; знижувати; зменшувати;
27. to improve	покращувати; полегшувати
28. to consult the doctor	звертатись до лікаря
29. to refer patient to doctor (physician)	відсилати пацієнта до лікаря
30. diagnosed undiagnosed	діагностований; не діагностований

Exercise 1. Read and translate the text

PROFESSION OF THE PHARMACIST

Pharmacy is the science and the art concerned with collection, preparation, and standardization of drugs. Its scope includes cultivation of plants that are used as drugs, synthesis of chemical compounds of medicinal value, and analysis and standardization of medicinal agents. The science that embraces all available knowledge of drugs with special reference to the mechanism of their action in disease treatment is pharmacology. Obviously, this broad science has many subdivisions, such as toxicology (the study of poisons) and therapeutics (the use of drugs in disease treatment). According to the description, pharmacy is one of the subdivisions or specialties of pharmacology. Members of this profession are called pharmacists or druggists. They were once called apothecaries. The word "pharmacy" also refers to a place where drugs are prepared or sold. Most pharmacies, sometimes called drugstores, sell a variety of products in addition to drugs**.**

Historically, the fundamental role of pharmacists as a healthcare practitioner was to check and distribute drugs to doctors for medication that had been prescribed to patients. In more modern times, pharmacists advise patients and health care providers on the selection, dosages, interactions, and side effects of medications, and act as a learned intermediary between a prescriber and a patient. Pharmacists monitor the health and progress of patients to ensure the safe and effective use of medication. Pharmacists may practice compounding; however, many medicines are now produced

by pharmaceutical companies in a standard dosage and drug delivery form.

Pharmacists dispense medications prescribed by doctors and other healthcare professionals and then explain to their patients how to use them correctly. They answer questions about both prescriptions and over-the-counter products, help patients manage illnesses, and keep track of what drugs individuals are taking so they can avoid interactions. Pharmacists also advise doctors and other health practitioners about drug selection, dosages, and interactions.

Pharmacists fill prescriptions written by physicians or dentists and prepare labels for medicines. On the labels, pharmacists include directions for patients given in prescriptions. At one time, pharmacists compounded their own medicines. Today pharmaceutical manufacturers supply most drugs. But pharmacists must still compound some medicines and be able to prepare antiseptic solutions, ointments, and other common remedies. They also advise people on the selection of nonprescription drugs, such as cold tablets. In addition, pharmacists are responsible for the legal sale of narcotics and poisonous substances.

Pharmacists are often the first point-of-contact for patients with health inquiries. Thus, pharmacists have a significant role in assessing medication management in patients, and in referring patients to physicians.

Professional pharmacy education will consist of the following coursework:

- Functional Human Anatomy and Histology
- Organic Chemistry
- Introduction to Clinical Pharmacy Skills
- Pharmacy Skills Lab
- Principles of Pharmacology and Medicinal Chemistry
- Immunizations
- Oncology

All students do internships as well. They work in community and hospital pharmacies and in other pharmacy practice settings to gain hands-on training from professional pharmacists.

After earning a Master degree, it will be time to find your first professional

pharmacy job. What qualities will prospective employers will be looking for in job candidates? While they will vary from employer to employer, here are specifications from job announcements:

- "Serve as patient advocate ..."
- "Excellent verbal and written communications skills and computer proficiency are essential"
- "Must possess good organizational and problem solving skills"
- "Uphold service standards for counseling, dispensing, pricing, licensing, managing, inventory and record keeping".

Pharmacy laws generally include regulations for pharmacy practice, poisons sale, narcotics dispensing, and labeling and sale of dangerous drugs. The pharmacist sells and dispenses drugs within the provisions of the food and drug laws of the country in which he practices. These laws recognize the national pharmacopoeia (a treatise on products used in medicine, their purity, dosages, and other data) as the standard for drugs. The pharmacopoeias of different nations are compiled and published according to respective national legal procedures. The World Health Organization of the United Nations published the first volume of the Pharmacopoeia International is in the early 1950s. Its purpose is to standardize, as far as possible, drugs throughout the world. There are two volumes and a supplement. This pharmacopoeia is intended to supply standards and nomenclature for those countries that have no national pharmacopoeia: Volume 1 contains monographs for basic chemicals and drugs of plant origin; Volume 2 contains monographs for medicinal agents and specifications for dosage forms.

Exercise 2. Translate the following words and word-combinations:

Pharmacy, pharmacist, pharmaceutical industry (education), to prescribe, prescription, to dispense medication, over-the-counter products, dosage, to take drugs (medicines), to avoid interaction (overmedication), drug selection, to do internship, side effect, compounding, responsibility, to be responsible (for), to decrease medication error, health inquiries, to provide information, treatment, to obtain degree in pharmacy (medicine).

Exercise 3. Find in the text English equivalents to the following words and

word-combinations:

1) видавати ліки; 2) уникати взаємодії; 3) радити; 4) вибір ліків; 5) бути успішним(в); 6) ліки, що відпускаються без рецептів; 7) здобути ступінь бакалавра; 8) проходити інтернатуру; 9) здобути професійні навики; 10) роботодавець; 11) оголошення; 12) навики вирішення проблем; 13) ліцензування; 14) ціноутворення; 15) фармацевтичні компанії; 16) пряма відповідальність; 17) скарга пацієнтів; 18) виготовлення ліків; 19) лікування; 20) персонал; 21) за рецептом; 22) забезпечувати; 23) лабораторні тести; 24) проведення імунізації; 25) освітні вимоги.

Exercise 4. Choose the correct variant.

1. The science that includes all available knowledge of drugs and the mechanism of their action in disease treatment is ***pharmacology /pharmacy.***

2. Pharmacy is one of the subdivisions or specialties of **pharmacology / toxicology**.

3. Pharmacists are responsible for the legal **sale /preparation** of narcotics and poisonous substances.

4. The **pharmacist /pharmacologist** sells and dispenses drags within the provisions of the food and drug laws of the country in which he practices.

5. The purpose of the Pharmacopoeia International is to **standardize /advertise**, as far as possible, drugs throughout the world.

Exercise 5. Say whether these statements are true or false. Make any corrections if necessary:

1. The only duty of pharmacists is to sell medications and other products. **(T/F)**

2. Pharmacists usually answer questions about both prescriptions and over-the-counter products. **(T/F)**

3. Pharmacists usually know little about drug selection, dosages and interaction of medicines. **(T/F)**

4. To become pharmacist you need to earn Bachelor or Master degree. **(T/F)**

5. Some students do their internship after the graduating from the university.

6. Excellent communicative skills are essential for pharmacists. **(T/F)**

7. Pharmacists usually practice compounding and they dispense only their own medicines. (T/F)

8. Pharmaceutical care has many benefits. **(T/F)**

Exercise 6. Make up sentences by combining the given words and phrases:

1. their illnesses/ help/ patients/ Pharmacists/ manage.

_____

2. Pharmaceutical/ for/ direct/ responsibility/ care/ involves/ patients/ taking.

_____

3. possess/ They/ and problem/ good/ skills/ organizational/must/ solving.

_____

4. produce/ a great/ of medicines/ number/ companies/ Pharmaceutical.

_____

5. problems/ Pharmacists/ with health/ patients/ are/ often/ point-of-contact/ the first.

_____

6. answer/ about/ products/ both prescriptions and/ questions/ pharmacists/ Dispensing/ over-the-counting.

_____

7. law/ for/ generally/ pharmacy practice/ Pharmacy/ regulations/ include.

_____

Exercise 7. Answer the following questions:

1. What responsibilities do pharmacists have?
2. What are the educational requirements for the career of pharmacist?
3. What degree do you need to become pharmacist?
4. What fields of Pharmacology do you know?
5. What personal qualities should a good pharmacist possess?
6. What embraces Pharmacy as a science?
7. What was the fundamental role of pharmacists?
8. Why do pharmacists monitor the health and progress of patients to ensure the safe and effective use of medications?
9. Do pharmacists usually compound medicines at the chemistry?

10. What is Pharmacopoeia? What is its purpose?

Exercise 8. Match the words with the definitions:

1. DOSAGE	a) a room or building that is used for scientific research, experiments
2. LABORATORY	b) a shop where medicines and drugs are prepared and sold.
3. PHARMACY	c) someone who is studying at a university
4. COURSE	d) a substance, especially a liquid, that you take in order to cure an illness.
5. MEDICINE	e) one of the subdivisions or specialties of pharmacology
6. STUDENT	f) the amount of a medicine you should take over a period of time.
7. PRESCRIPTION	g) a period of study in a particular subject, especially at a university
8. CHEMISTRY	h) an official piece of paper on which a doctor has written the name of the medicine that you need
9. NOMENCLATURE	i) a list of drugs, together with information on their effects and instructions on how they should be used
10. COMPOUND	j) a system for naming things, especially in a particular area of science
11. TOXICOLOGY	k) an occasion when two or more things react to each other
12. TO ENSURE	l) too much of a drug taken or given at one time, either intentionally or by accident
13. INTERACTION	m) the scientific study of the

	characteristics and effects of poisons
14. OVERDOSE	n) to make something certain to happen
15. PHARMACOPOEIA	o) a chemical that combines two or more elements

Exercise 9. Complete the sentences using the words from exercise 8:

1. In most countries there is an official _____, and any dispensed drug must comply with its standards.

2. Take a spoonful of _____at mealtimes.

3. Do not exceed the recommended _____.

4. We have very high safety standards in the _____.

5. A typical independent _____gets 92% of its income from prescriptions.

6. _____take special courses during the third and fourth years of study.

7. He always was good at _____, so he decided to become a pharmacist.

8. The systematic naming of drugs, especially pharmaceutical drugs, is _____.

9. These drugs are only available on _____.

10. They have a legal obligation _____ patients receive a proper treatment.

11. Before taking any medicine, read the instruction carefully to avoid _____.

12. Salt is a _____ of sodium and chlorine.

13. The historical development of _____ began with early cave dwellers who recognized poisonous plants and animals and used their extracts for hunting.

14. When he was 17, he took an _____of sleeping pills and nearly died.

Exercise 10. Match the words from two columns to form word combinations:

1. to be successful	a) for a job
2. to do	b) a patient to a doctor
3. to look	c) scientific degree
4. to avoid	d) at Organic Chemistry
5. to work	e) with information

6. to refer	f) coursework
7. to provide	g) on prescription
8. to earn	h) for the famous company
9. to dispense drugs	i) interactions
10. to complete	j) internship

1. ___; 2. ___; 3. ___; 4. ____; 5. ____; 6. ____; 7. ____; 8. ____; 9. ___; 10. ___.

Exercise 11. Choose the correct word in brackets:

1. In most work environments, pharmacists have a lot of autonomy to *(manage/ be managed)* their work and time.

2. For me, dealing with people makes being a pharmacist *(the best/ better)* profession of all.

3. The only person who determines whether you have a great job or a lame job is *(you/ yours).*

4. Pharmacy is the branch of science which *(deals / deal)* with the study of chemistry of drugs, their origin, procedures for drug development, their preparation, dispensing, their effects and eventual use for prevention and treatment of disease.

5. In medical retail stores, the pharmacist prepares and dispenses drugs *(by/ on)* prescription to the general consumer.

6. Industrial *(pharmacist/ pharmacists)* carry out clinical trials, where drugs are tested for safety and effectiveness.

7. In today's world pharmacy research *(is/ are becoming)* more and more IT oriented.

8. The field of pharmacy (science/ scientific) is broad, challenging and potentially lucrative.

Exercise 12. Match the words in A with their opposites in B:

A	**B**
1. to increase	1. to fail
2. correct	2. to lose

3. to fulfill	3. intolerant (impatient)
4. to enjoy	4. to decrease
5. to look for	5. unimportant
6. patient (adj.)	6. to hate
7. significant	7. specific
8. common	8. incorrect
9. final	9. unimportant
10. significant	10. irresponsible
11. responsible	11. safe
12.dangerous	12. primary

1. ___; 2. ___; 3. ___; 4. ___; 5. ___; 6. ___; 7. ___; 8. ___; 9 ___; 10.___; 11. ___; 12. ____.

Exercise 13. Write synonyms to the words given below:

1. Druggist - _____;
2. Chemistry -_____;
3. To appoint - _____;
4. Illness - _____;
5. Quantity - _____;
6. Choice - _____;
7. Charge - _____;
8. To guarantee - _____;
9. To raise - _____;
10. To investigate - _____;

Exercise 14. Translate into English:

1. Я навчаюсь на хімічному факультеті за спеціальністю «Фармація».

2. У нашому місті є багато мережевих аптек. Інколи цінова політика різна на однакові препарати.

3. Ви не можете придбати ці ліки. Ми відпускаємо їх тільки по рецепту.

4. Досвідчені фармацевти працюють над створенням нових дієвих препаратів.

5. Чи можете ви пояснити спосіб застосування ліків?

6. Ви повинні приймати ліки за інструкцією, щоб уникнути передозування.

7. Пацієнти часто звертаються до фармацевтів за порадою щодо вибору ліків.

8. Перш ніж приймати ліки, вам слід було уважно прочитати інструкцію.

9. Для вашої аптечки вам доведеться купити деякі безрецептурні засоби..

10. Передозування ліками може спричинити серйозні наслідки або навіть смерть.

AT THE CHEMIST'S

Speaking

1. What is a chemistry? Describe what we can see there.
2. What can people buy there?
3. Do people buy all kinds of medicines without any restriction?
4. What medicines belong to over-the-counter medicines?

ACTIVE VOCABULARY

1. order	замовляти
2. cabinet	шафа
3. properly	відповідним чином, відповідно
4. moisture	волога
5. lozenge	таблетка
6. ointment	мазь
7. drops	краплі
8. syrup	сироп
9. suppository	супозиторій
10. powder	порошок
11. topical	місцевий (для місцевого застосування)

12.	indication	показання
13.	contraindication	протипоказання
14.	side effect	побічний ефект
15.	expiration date	дата використання
16.	to be certain	бути впевненим
17.	ensure	запевняти, гарантувати
18.	pregnancy	вагітність
19.	breast feeding	грудне вигодовування
20.	medicine chest	аптечка

Exercise 15. Read and translate the following words and word-combinations into Ukrainian. Pay your attention to the pronunciation of the words:

Dosage; overdosage; to dose; correct dose; side effect; harmful effect; unwanted effect; lozenge; moisture; healthcare professionals; to indicate; indications; contraindications; to prescribe; prescription; nonprescription medicine; expiration; action; interaction; breast milk; breast feeding; safely; safety; safe; newborn child; unborn child.

Exercise 16. Match the words with the definitions:

1. MOISTURE	a) the last day on which a medicine or a product can be used
2. LOZENGE	b) very powerful, forceful, or effective
3. NONPRESCRIPTION	c)department in the chemistry where medicines are ordered according to the prescription
4. EXPIRATION DATE	d) not good enough or incorrect in amount or quality
5. POTENT	e) specific situation in which a drug, procedure, or surgery should

	not be used because it may be harmful to the person
6. STORAGE	f) drugs that are safe and effective for use by the general public without advice from a health professional
7. NEWBORN	g) a small, flavored candy, often containing medicine, which dissolves when sucked in the mouth
8. PRESCRIPTION DEPARTMENT	h) a liquid such as water in the form of very small drops, either in the air, in a substance, or on a surface
9. CONTRADICTIONS	i) recently born
10. INADEQUATE	j) the putting and keeping of medicines and other things in a special place for use in the future

Exercise 17. Complete the following sentences using terms from exercise 16.

1. Control the level of _____ in the room for adequate storage of medicines.
2. We have a wide range of cough _____, they make a cough and sore throat feel better. You may choose!
3. The prescription was given to the _____ to get compounded syrup with the adequate dosage of the active ingredient.
4. What is _____ of this ointment? We have already kept it for two years.
5. She is suffering from complications because of _____ treatment.
6. Patients are always warned about _____ drugs because they can have unpleasant side-effects.

7. _____ is the opposite of indication, which is a reason to use a certain treatment.

8. Aspirin belongs to _____ and you can buy it without doctor's prescription.

9. Breast-feeding is extremely beneficial to the health of _____ babies.

10. We follow very strict guidelines on the use and _____ of against Covid-19 vaccines.

Exercise 18. Read the following text

CHEMIST'S SHOP

The chemist's shop is one of the medical institutions supplying people with medicines and other medical items. It is place where a great number of articles is sold and prescriptions are made; drugs are composed, dispensed, stored and sold there. An ordinary chemist's shop has a chemist's department, a prescription one, proper working rooms and a hall for visitors.

The medicines are kept in drug cabinets, open shelves and refrigerators. It is important to store all medicines properly, because heat or moisture may cause the medicine to break down. At the chemist's shop we can buy tablets (lozenges), capsules, ointments, drops, syrups, suppositories, powders, topical solutions, creams, gels, and drugs for intramuscular and intravenous injections.

At the chemist's department you can buy ready to use medicines or different things for medical care (hot water bottles, medicine droppers, mustard plasters, cupping glasses, thermometers and so on) and medical herbs. If you use an over-the-counter (non-prescription) medicine, follow the directions on the label. Every medicine has instruction for using where the indications, contraindications, dosage, side effects, expiration date and others are indicated. Poisonous, drustic, narcotic and psychotropic drugs can be sold by prescription only. These drugs are potent and can be dangerous if taken overdose so their use must be strictly controlled. All containers of dispensed medicines should be clearly labeled with the following particulars: name of a patient, name of medicine, correct dosage instructions, date of dispensing, expiry date, contradictions, name and address of the pharmacy.

Before a patient leaves the chemist's shop with a medicine, the pharmacist must be certain that he/she has the right medication, correct dose, and directions for use. The pharmacist also has to provide information about how the drug works and side effects and ensure that there are no contraindications to the medicine and no harmful drug-drug, drug-food, or drug-disease interactions. The pharmacist is usually the last healthcare professional to have contact with patients before they receive their medicines. So, before you use any medicine, the pharmacist and the doctor have to know:

- if you have ever had an allergic or unusual reaction to any medicine, food, or other substances;
- if you are on a low-salt, low-sugar, or any other special diet;
- if you are pregnant or if you plan to become pregnant. Certain medicines may cause birth defects or other problems in the unborn child. The use of any medicine during pregnancy must be carefully considered;
- if you are breast feeding. Some medicines may pass into the breast milk and cause unwanted effects in the baby;
- if you have any medical problems;
- if you are now taking or have taken any medicines in the past few weeks. Don't forget over-the-counter (non-prescription) medicines such as aspirin, laxatives, and antacids.

Exercise 19. Answer the following questions:

1. How many departments are there in the state chemist's shop? What are they?
2. What are kept in drug cabinets?
3. What forms of medicine can you name?
4. What should you pay a special attention to if you use an over-the-counter (non-prescription) medicine?
5. Prove that the pharmacist is a rather responsible healthcare professional.
6. What are the main duties and responsibilities of a pharmacist?
7. Are there any relations between the diet and the intake of a certain drug?

Exercise 20. Translate into English:

Зберігати медикаменти відповідним чином; рецептурний відділ; безрецептурний відділ; спричиняти небажаний ефект; мати алергію до медикаментів; внутрішньовенна ін'єкція; внутрішньо м'язова ін'єкція; ефективно застосувати медикаменти; вказувати відповідне дозування; побічний ефект; медпрацівники; розчин для місцевого застосування; забезпечити відповідною інформацією.

Exercise 21. Arrange the words with opposite meaning into the pairs:

Harmful, indication, artificial feeding, final, correct, born, state-owned, breast feeding, incorrect, harmless, unborn, contraindication, private, primary.

1. _____ - _____;
2. _____ - _____;
3. _____ - _____;
4. _____ - _____;
5. _____ - _____;
6. _____ - _____;
7. _____ - _____;
8. _____ - _____.

Exercise 22. Choose correct option to complete the sentences and put questions to the sentences beginning with the given interrogative words:

1. Doctors write a ____ for medicine which chemists or pharmacists make up.

a) certification; b) prescription; c) receipt; d) recipe.

Who _____?

2. A chemist always puts a _____ on a bottle of medicine.

a) label; b) receipt; c) program; d) ticket).

What _____?

3. They keep medicines _____ of reach of children.

a) out; b) with; c) out; d) from.

Do _____or_____?

4. It's time to take another _____ of medicine.

a) cup; b) dose; c) drink; d) spoon.

Is _____?

5. The medicine he takes only _____ the pain.

a) heals; b) remedy; c) relieves; d) solves.

What _____?

6. The medicine is so _____ that he can restore his health within a few days.

a) effective; b) efficient; c) influential; d) proficient.

_____, _____?

Exercise 23. Divide the following forms of drugs into the three groups. Make up sentences of your own with the words.

(1. taken by mouth; 2. injected into the body; 3. applied to the body surface):

Capsules; cream; lotion; lozenge; pill; powder; tablet; vaccines; ointment.

Exercise 24. Fill in blanks with the prepositions:

1. All medicines we need are ordered or bought _ a chemist's shop. 2. Certain medicines may cause birth defects or other problems _ the unborn child. 3. If you use an over-the-counter (nonprescription) medicine, follow the directions _ the label. 4. The pharmacist is primarily responsible _ accurately filling prescriptions. 5. The pharmacist also has to provide information _ how the drug works and side effects.

Exercise 25. Choose the English equivalents to the Ukrainian ones. Make up the dialogue using the terms and expressions given in the table:

1. pharmacy on duty	1. Передозування цих ліків викликає несприятливий ефект.
2. well-equipped	2. Зберігайте ці ліки в прохолодному місці .
3. to write out the prescription	3. Чи ви добре переносите новокаїн?
4. Take this drug three times a	4. Необхідна доза вказана в

day.	рецепті.
5. This mixture is for the cough.	5. Приймайте ці ліки по чайній (столовій) ложці до (після) їжі.
6. These tablets are for the headache.	6. Ці ліки знижують кров'яний тиск (полегшують зубний біль, відкладають ніс)
7. keep these medicines in cool place	7. Ця мікстура від кашлю.
8. The overdosage of this drug is causing an side effect	8. Ці пігулки від головного болю.
9. Are you sensitive to novocain?	9. Чергова аптека
10. This drug reduces blood pressure (relieves toothache, clears the nose).	10. добре укомплектована
11. The dose to be taken is indicated in the prescription.	11. Виписувати рецепт
12. Keep the drug in a cool place.	12. Ці ліки знижують кров'яний тиск (знімають зубний біль, зменшують нежить).
13. Take this drug a teaspoonful (tablespoonful) before (after) meals.	13. Приймайте ці ліки тричі на день.
14. Take these tablets one every three hours.	14. Не приймайте ліки без призначення лікаря.
15. Take the drug with milk.	15. Приймайте ці пігулки по одній кожні три години.

Exercise 26. Speak on the pharmaceutical provision and pharmaceutical products, the role of pharmacists.

Exercise 27. ***A)*** **Read the following words and try to memorize them:**

to confuse - змішувати, переплутати;

to doubt - сумнів, сумніватись;

to discard - позбавлятися чогось, викидати;

ipecac - іпекакуана, блювотний корінь;

adhesive - липкий;

bandage - бинт;

gauze - марля;

pad - прокладка; подушечка, валик;

rubbing - натирання;

antacid - засіб для зниження кислотності;

calamine - каламін;

sunscreen - сонцезахисний крем;

flush - виливати, позбавлятися;

outdated - застарілий;

deteriorate - псувати(ся).

B) **Make up sentences of your own with these words.**

Exercise 28.

A) **Complete the text with the words from the list below.**

B) **Read the following text and comment upon it.**

C) **Retell the text.**

D) **Describe your home medicine chest.**

YOUR HOME MEDICINE CHEST

Keep _____ in their original containers, otherwise you or members of your family may get confused. Taking the wrong medicines or _____ combinations of medicines can be dangerous.

If the label gets separated from a medicine _____ and there is any doubt to

its contents, discard the medicine immediately.

A well-equipped medicine _____ has the following:

- Pain _____: aspirin or, for children aspirin substitutes such as acetaminophen;
- Syrup of ipecac: a liquid used to promote _____ and used in certain kinds of poisoning emergencies;
- Bandages: adhesive strip bandages, adhesive tape and sterile _____ pads, elastic bandages, and _____ bandages;
- Tools, including _____ to cut bandages and tweezers to remove splinters;
- A thermometer including a rectal type _____ if you have an infant;
- Absorbent cotton and rubbing alcohol;
- Over-the-counter pharmaceuticals, antacids, _____ syrup, calamine or other mild lotion for itching, a sunscreen to prevent _____, and skin creams or lotions to treat sunburn.

All these things and many others you can buy at the chemist's shop. Remember: flush unused, outdated prescription drugs down the toilet. Medicine deteriorates over the time.

(***container, inappropriate, cough, vomiting, scissors, sunburn, chest, relievers, gauze, medicines, surgical, thermometer)***

Exercise 29. Choose the correct answers:

Questions:

1. What must I do if I don't understand the information on the label?
2. Where can I find the information?
3. How long does it take to read the label?
4. Why is it important to read the label?
5. When I should read the label?

Answers:

a) Reading the label helps you take the medicine correctly.

b) You should always read the label before you take the medicine.

c) In the label of the medicine.

d) It only takes a few minutes.

e) If you don't understand the information on the label, do not take the medicine. Ask the doctor or pharmacist to help you.

Exercise 30. Translate the following sentences into English:

1. Чітко дотримуйтесь інструкції, коли приймаєте ліки.

2. Ви отримаєте ці ліки наступного дня у рецептурному відділі, якщо замовите сьогодні.

3. Ваш дільничний лікар випише вам рецепт на необхідні ліки і пояснить дозування.

4. Ви можете лише деякі з цих медичних засобів взяти у закордонну туристичну подорож (for traveling abroad).

5. Вам слід порадитися з лікарем щодо вживання цих ліків та вашої дієти.

6. Для вашої аптечки вам доведеться купити бинт, вату, йод чи
інший спиртовий розчин для дезінфекції, знеболююче та деякі інші ліки.

7. Вагітним жінкам небезпечно приймати ліки, особливо сильнодіючі без консультації лікаря.

9. Уважно прочитайте інформацію щодо протипоказань.

Exercise 31. A) Read the dialogue and try to act as a pharmacist and a customer:

Pharmacist: Can I help you?

Customer: Yes, please. My daughter was coughing quite a bit last night. Can you suggest anything?

Pharmacist: How old is your daughter?

Customer: She’s four.

Pharmacist: This is a good children’s cough syrup. Give her two teaspoons before she goes to bed. If her cough doesn’t clear up in a day or two, you should take her to the doctor.

Customer: I will. Thanks.

Pharmacist: And here's your prescription.

Customer: Are there any special instructions?

Pharmacist: They're on the bottle. You have to take it on an empty stomach.

Customer: OK. And thanks again.

B) Work in pairs. Reproduce a dialogue between a pharmacist and a customer.

UNIT 3.

STRUCTURAL ORGANIZATION OF THE BODY

Speaking:

1. What are the main levels of structural organization of the human body?
2. What is the smallest independently functioning unit of a living organism?
3. What does a human cell typically consist of?
4. What is a tissue? What types of tissues do you know?
5. What is metabolism?
6. How many body systems have been stated? What are the main systems of the human body?
7. What are the major parts of a skeleton?
8. What internal organs do you know?

ACTIVE VOCABULARY

1. cell	клітина
2. tissue	тканина
3. organ	орган
4. system	система
5. metabolism	метаболізм
6. anabolism	анаболізм
7. catabolism	катаболізм
8. nutrients	поживні речовини
9. vital activities	життєдіяльність
10. excretory organs	органи виділення
11. to affect	впливати
12. substance	речовина
13. protein	білок
14. acid	кислота
15. fats	жири
16. chromosomes	хромосоми

17. gene	ген
18. DNA	ДНК
19. a karyotype	каріотип
20. amniocentesis	амніоцентез
21. abnormality	аномалія
22. obstetrician	акушер
23. cytoplasm	цитоплазма
24. nucleus	ядро
25. cell membrane	клітинна мембрана
26. mitochondria	мітохондрії
27. endoplasmic reticulum	ендоплазматичний ретикулум
28. fiber	волокна
29. fibrous extensions	волокнисті (фіброзні) розширення
30. integumentary	покривний
31. cardiovascular	серцево-судинний
32. respiratory	дихальний
33. digestive	травний
34, urinary	сечовий, сечовивідний
35. sweat	потовий
36. posture	постава
37. heat	тепло, жар
38. participate	брати участь
39. nutrient	поживна речовина
40. hormone	гормон
41. combat	боротися
42. oxygen	кисень
43. carbon dioxide	вуглекислий газ
44. elimination	видалення, виведення

45. wastes products	продукти відходів
46. ion	іон
47. nervous	нервовий
48. receptor	рецептор
49. major	головний
50. endocrine	ендокринний
51. balance	рівновага
52. gonad	статева залоза
53. genitals	статеві органи
54. passage	прохід, протока
55. accessory	додатковий, допоміжний

Exercise 1. Translate the words and word-combinations into Ukrainian.

A complex organism, intercellular substance, tissues, closely interconnected, affect each other, vital activities, nutritive substances, decomposition of organic substances, waste products renewed from other substances, muscular contraction, blood vessels, excretory organs, pathologic changes, morbid state.

Exercise 2. Read and translate the text. Summarize it.

ORGANISM AS A WHOLE

The organism is a single system. In a complex organism cells and intercellular substance form tissues, tissues make up organs, and organs unite in systems. All the cells, tissues, organs and systems of organs are closely interconnected and affect each other.

The vital activities of the cells, tissues, organs and the whole organism are based on metabolism, which consists of two interconnected processes: assimilation of nutritive substances (anabolism) and decomposition of organic substances (catabolism).

The complex substances of the cells and tissues continuously split into simpler ones: at the same time, they are renewed from other substances delivered to the cells and tissues from outside. The catabolism in the cells and tissues is accompanied by liberation of energy which operates all the processes in the organs and tissues (muscular contraction, heart action, cerebral activity, etc.) including anabolism.

During the vital activities of the organism, which are based on metabolism, various organs and systems of organs establish close connections and interactions. This may be readily demonstrated on a skeletal muscle. Metabolism takes place in the muscle, as it does in other organs. This naturally requires a continuous supply of nutrients and oxygen which are delivered by the blood through the blood vessels. The nutrients enter the blood from the digestive system, and the oxygen from the respiratory system (through the lungs). The waste products formed in the process of metabolism pass from the muscles into the blood and are transported to the excretory organs and eliminated. The blood flows through the blood vessels because of the contractions of the heart whose work, like that of other organs, is regulated by the nervous system.

The regulations between the various systems of organs can also be demonstrated by coordinated changes in their activities. Intensification of the activity of one organ or system of organs is accompanied by changes in the other system. For example, physical work causes metabolism to increase sharply in the muscles.

This leads to a coordinated change in the activity of the cardiovascular, respiratory, excretory and other systems.

The interdependence between the various organs and the entire organism manifests itself a disease. Pathologic changes in one particular organ affect other systems of organs. The principle of integrity of the organism implies that the disease of any organ must not be regarded a purely local disturbance, but as a morbid state of the entire organism.

Exercise 3. Answer the following questions.

1. How are the cells, tissues, organs and systems of organs interconnected and affect each other?

2. What processes are the vital activities of the cells, tissues, organs and the whole organism based on?

3. What two interconnected processes does metabolism consist of?

4. What is the catabolism in the cells and tissues accompanied by?

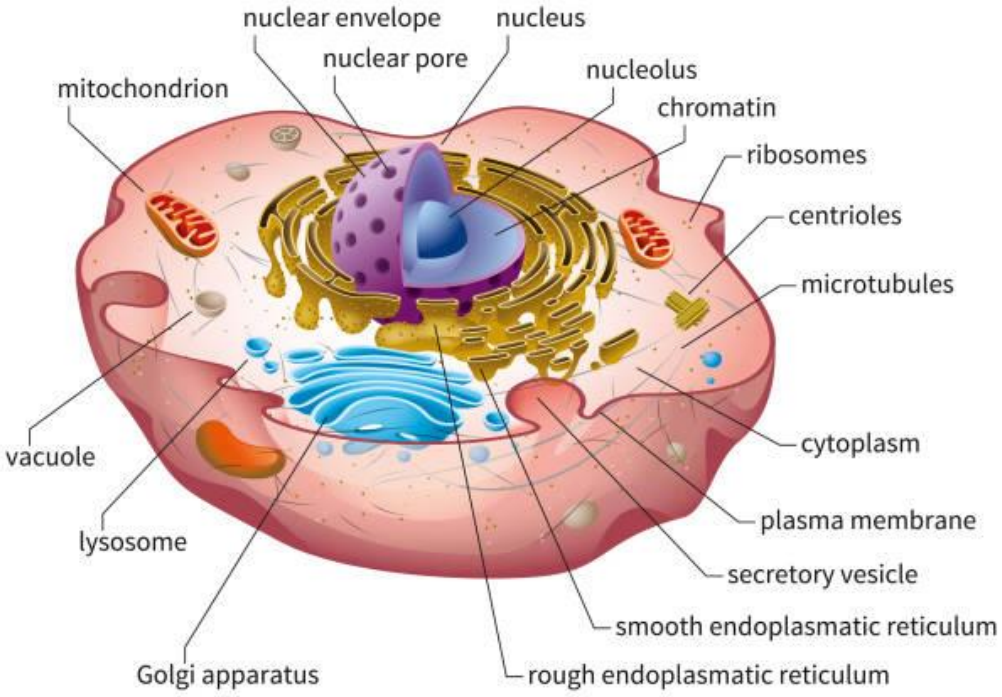
5. How do various organs and systems of organs establish close connections and interactions during the vital activities of the organism?

6. How do pathologic changes in one particular organ affect other systems of organs? Can you give the examples?

7. What does the principle of integrity of the organism imply?

Exercise 4. Read and translate the text. Study the picture and the main terms. Make a plan of the text and put 10-15 questions about the text.

CELLS



The cell is the fundamental unit of all living things (animal or plant). Cells are everywhere in the human body – every tissue, every organ is made up of these individual units. All cells are similar in that they contain a gelatinous substance composed of water, protein, sugar, acids, fats, and various minerals.

The cell membrane not only surrounds and protects the cell but also regulates what passes into and out of the cell. The nucleus controls the operations of the cell. It directs cell division and determines the structure and function of the cell. Chromosomes are rod-like structures within the nucleus. All human body cells, except for the sex cells, the egg and the sperm (short for spermatozoon), contain 23 pairs of chromosomes. Each sperm and each egg cell have only 23 unpaired chromosomes.

After an egg and a sperm cell unite to form the embryo, each cell of the embryo then has 46 chromosomes (23 pairs).

Chromosomes contain regions called genes. There are several thousand genes, in an orderly sequence, on every chromosome. Each gene contains a chemical called DNA (deoxyribonucleic acid). DNA regulates the activities of the cell according to its sequence (arrangement into genes) on each chromosome. The DNA sequence resembles a series of recipes in code. This code, when passed out of the nucleus to the rest of the cell, directs the activities of the cell, such as cell division and synthesis of proteins.

A karyotype is a photograph of an individual's chromosomes, arranged by size, shape, and number. Karyotyping can determine whether chromosomes are normal. For example, an obstetrician may recommend amniocentesis (puncture of the sac around the fetus for removal of fluid and cells) for a pregnant woman so that the karyotype of the baby can be examined.

If a baby is born with a chromosomal abnormality, serious problems can result. In Down syndrome, the karyotype shows 47 chromosomes instead of the normal number, 46. The extra chromosome 21 results in the development of a child with Down syndrome (also called trisomy 21 syndrome). Its incidence is about 1 in every 750 live births, but as the mother's age increases, the presence of the chromosomal abnormality increases.

The cytoplasm (cyt/o = cell, -plasm = formation) includes all of the material outside the nucleus and enclosed by the cell membrane. It carries on the work of the cell (e.g., in a muscle cell, it does the contracting; in a nerve cell, it transmits impulses). The cytoplasm contains specialized apparatus to supply the chemical needs of the cell.

Mitochondria are small sausage-shaped bodies that provide the principal source of energy for the cell. They use nutrients and oxygen to release energy that is stored in food. During the chemical process called catabolism, complex foods such as sugar and fat are broken down (cata-means down) into simpler substances and energy is released by the mitochondria. Thus, catabolism provides the energy for cells to do the work of the body.

The endoplasmic reticulum is a network (reticulum) of canals within the cell. These canals are cellular tunnel systems that manufacture proteins for the cell. Attached to the endoplasmic reticulum are ribosomes, which build long chains of

proteins. Anabolism, occurring on the endoplasmic reticulum, is the process of building up (ana- means up) large proteins from small protein pieces called amino acids. Examples of important proteins for cell growth are hormones and enzymes.

Together, these two processes – anabolism and catabolism make up the cell's metabolism. Metabolism, then, is the total of the chemical processes occurring in a cell. If a person has a "fast metabolism," foods such as sugar and fat are used up very quickly, and energy is released. If a person has a "slow metabolism," foods are burned slowly, and fat accumulates in cells.

DIFFERENCES IN CELLS

While we have just seen how cells contain similar structures, as they develop in the embryo, cells change to form many different types. Cells are different, or specialized, throughout the body to carry out their individual functions. For example, a muscle cell is long and slender and contains fibers that aid in contracting and relaxing; an epithelial cell (a lining and skin cell) may be square and flat to provide protection; a nerve cell may be long and have various fibrous extensions that aid in its job of carrying impulses; a fat cell contains large, empty spaces for fat storage. These are only a few of the many types of cells in the body. The term that describes this change in cells as they mature and specialize is differentiation.

Exercise 5. Study the table with the terms.

anabolism	Process of building up large proteins from small protein pieces called amino acids. Ana- means up, bol means to cast, and -ism is a process.
catabolism	Process whereby complex nutrients are broken down to simpler substances and energy is released. Cata- means down, bol means to cast, and -ism is a process.
cell membrane	Structure surrounding and protecting the cell. It determines what enters and leaves the cell.

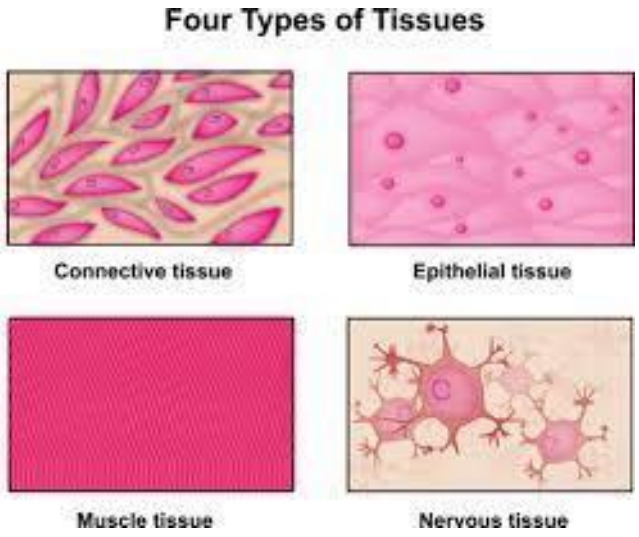
chromosomes	Rod-shaped structures in the nucleus that contain regions of DNA called genes. There are 46 chromosomes (23 pairs) in every cell except for the egg and sperm cells, which contain only 23 individual, unpaired chromosomes.
cytoplasm	All of the material that is outside the nucleus and yet contained within the cell membrane.
DNA	Chemical found within each chromosome. Arranged like a sequence of recipes in code, it directs the activities of the cell.
cytoplasm (cyt/o = cell, -plasm = formation) includes all of the material outside the nucleus and enclosed by the cell membrane.	Network of canals within the cytoplasm of the cell. Here, large proteins are made from smaller protein pieces.
genes	Regions of DNA within each chromosome.
karyotype	Picture (classification) of chromosomes in the nucleus of a cell. The chromosomes are arranged in numerical order to determine their number and structure.
metabolism	Total of the chemical processes in a cell. It includes catabolism and anabolism. Meta- means change, bol means to cast, and -ism means a process.
mitochondria	Rod-shaped structures in the cytoplasm that provide the principal source of energy (miniature “power plants”) for the cell.

catabolism	The process that occurs in mitochondria. (From the Greek mitos meaning thread and chondrion meaning granule.) HINT: Think of “mighty” mitochondria! nucleus Control center of the cell. It contains chromosomes and directs the activities of the cell.

Exercise 6. Give Ukrainian equivalents for the following words and word-combinations.

Tissue, histologist, regions of the body, epithelial tissue, linings of internal organs, exocrine and endocrine glands, responsible for the secretions, muscle tissue, voluntary muscle, involuntary muscle, under conscious control, muscle contractions, connective tissue, cartilage, adipose tissue, nerve tissue, glandular epithelial tissue, viscera, bloodstream,

Exercise 7. Read and translate the text. Put 10 -12 questions about the text.



Tissues

A tissue is a group of similar cells working together to do a specific job. A histologist (hist/o = tissue) is a scientist who specializes in the study of tissues. Several different types of tissue are recognized. Tissues of the same type may be located in various regions of the body. There are four types of tissues.

Epithelial Tissue

Epithelial tissue, located all over the body, forms the linings of internal organs, and the outer surface of the skin covering the body. It also lines exocrine and endocrine glands and is responsible for the secretions that the glands produce. The term epithelial originally referred to the tissue on (epi-) the breast nipple (thel/o). Now it describes all tissue that covers the outside of the body and lines the inner surface of internal organs.

Muscle Tissue

Voluntary muscle is found in arms and legs and parts of the body where movement is under conscious control. Involuntary muscle, found in the heart and digestive system, as well as other organs, allows movement that is not under conscious control. Cardiac muscle is a specialized type of muscle found only in the heart. Contractions of this muscle type can be seen as a beating heart in an ultrasound scan of a 6-week-old fetus.

Connective Tissue

Examples are adipose (fat) tissue, cartilage (elastic, fibrous tissue attached to bones), bones and blood.

Nerve Tissue

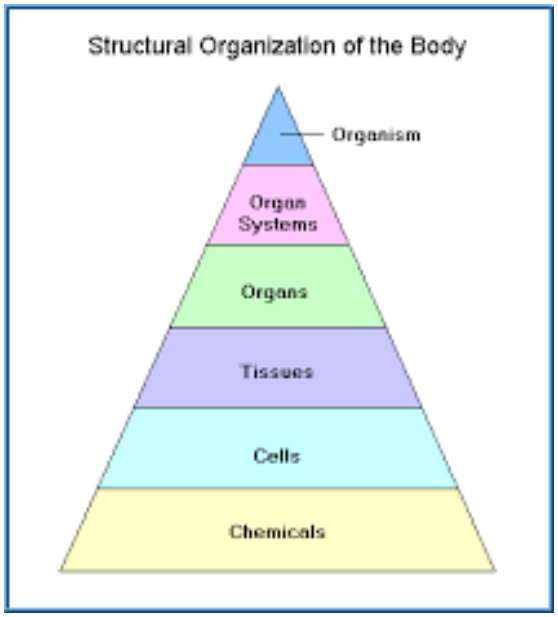
Nervous tissue is the main component of the two parts of the nervous system; the brain and spinal cord of the central nervous system (CNS), and the branching peripheral nerves of the peripheral nervous system (PNS), which regulates and controls bodily functions and activity.

Organs

Different types of tissue combine to form an organ. For example, an organ such as the stomach is composed of muscle tissue, nerve tissue, and glandular epithelial tissue. The medical term for internal organs is viscera (singular: viscus). Examples of abdominal viscera (organs located in the abdomen) are the liver, stomach, intestines, pancreas, spleen, and gallbladder.

Systems

Systems are groups of organs working together to perform complex functions. For example, the mouth, esophagus, stomach, and small and large intestines are organs that do the work of the digestive system to digest food and absorb it into the bloodstream.



Exercise 8. **Translate the following words and word-combinations into Ukrainian:**

Combine; subdivide; peripheral nervous system; major organ systems; respiratory; digestive; integumentary; sweat gland; protect; gonad; circulatory system; kidney; urinary bladder; urine; remove; esophagus; stomach; small and large intestines; digestion; nutrient; foreign substances; sensory receptors; allow body movements.

Exercise 9. Read and translate the following words and word-combinations:

Regulate temperature; prevent; cartilage; muscle; maintain posture; body heat; spinal cord; receive; metabolism; reproduction; pump; blood; throughout; remove; balance; respiratory passage; carbon dioxide; stomach; chemical process.

Exercise 10. Read the following text and translate into Ukrainian:

ORGAN SYSTEMS

The body systems have been variously stated to be nine, ten or eleven in number, depending on how much detail one wishes to include.

An organ system is a group of organs classified as a unit because of a common function or set of functions. The classification of organ systems is somewhat arbitrary. For example, the muscular and skeletal systems can be combined as the

musculoskeletal system, or the nervous system can be subdivided into the peripheral and central nervous systems.

The human organism is divided into the following major organ systems: the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic, respiratory, digestive, urinary, and reproductive systems.

The integumentary system consists of skin, hair, nails, and sweat glands. This system protects, regulates temperature, and prevents water loss.

The skeletal system includes bones, ligaments, cartilages, and joints. It protects internal organs, supports, and allows body movement, produces blood cells, and stores minerals.

The muscular system consists of muscles attached to the skeleton. This system allows body movement, maintains posture, and produces body heat.

The nervous system includes brain, spinal cord, nerves, and sensory receptors. It is a complex information system. It receives, processes and communicates information.

The endocrine system consists of endocrine glands. This system participates in the regulation of metabolism, reproduction, and controlling a large number of activities.

The cardiovascular system includes heart, blood vessels, and blood, which is pumped through the blood vessels by the heart. It transports nutrients, waste products, gases, and hormones throughout the body; plays a role in the regulation of body temperature.

The lymphatic system consists of lymph vessels, lymph nodes, and other lymph organs. This system removes foreign substances from the blood and lymph, maintains tissue fluid balance, and absorbs fats.

The respiratory system includes lungs and respiratory passages. It exchanges gases (oxygen and carbon dioxide) between the blood and the air and regulates blood pH.

The digestive system consists of mouth, esophagus, stomach, intestines, and accessory structures. This system performs the mechanical and chemical processes of digestion, absorption of nutrients, and elimination of wastes.

The urinary system includes kidneys, urinary bladder, and ducts that carry urine. It removes waste products from the circulatory system; regulates blood pH, ion balance, and water balance.

The reproductive system consists of gonads, accessory structures, and genitals of males and females. This system performs the processes of reproduction and controls sexual functions.

Exercise 11. Translate the following words and word-combinations into English:

Додатковий, допоміжний; покривний; нервовий; серцево-судинний; дихальний; травний; м'язовий; скелетний; сечовий; потовий; шкіра; запобігати втраті води; головний; кістка; суглоб; хрящ; зв'язка; розумовий; ендокринний; підтримувати поставу; мозок; чутливий рецептор; спинний мозок; брати участь; поживна речовина; серце; кров'яні судини; качати (кров); гормон; боротися; стороння речовина; нирки; сечовий міхур; протока; кисень; вуглекислий газ; видалення.

Exercise 12. Study the table with the main organ systems and organs that these systems consist of.

SYSTEM	ORGANS
Digestive	Mouth, pharynx (throat), esophagus (tube from the throat to the stomach), stomach, intestines (small and large), liver, gallbladder, pancreas
Urinary or excretory	Kidneys, ureters (tubes from the kidneys to the urinary bladder), urinary bladder, urethra (tube from the bladder to the outside of the body)
Respiratory	Nose, pharynx, larynx (voice box), trachea (windpipe), bronchial tubes, lungs (where the exchange of gases takes place)
Reproductive Female:	Ovaries, fallopian tubes, uterus (womb), vagina, mammary glands

Male:	Testes and associated tubes, urethra, penis, prostate gland
Endocrine	Thyroid gland (in the neck), pituitary gland (at the base of the brain), sex glands (ovaries and testes), adrenal glands, pancreas (islets of Langerhans), parathyroid glands
Nervous	Brain, spinal cord, nerves, and collections of nerves
Circulatory	Heart, blood vessels (arteries, veins, and capillaries), lymphatic vessels and nodes, spleen, thymus gland
Musculoskeletal	Muscles, bones, and joints
Skin and sense organs	Skin, hair, nails, sweat glands, and sebaceous (oil) glands; eye, ear, nose, and tongue

Exercise 13. Answer the following questions:

1. What systems does the human body consist of? 2. What are the major components of the integumentary system? 3. What are the major components of the skeletal system? 4. What does the muscular system consist of? 5. What are the major components of the nervous system? 6. What does the endocrine system consist of? 7. What are the major components of the cardiovascular system? 8. What does the lymphatic system consist of? 9. What are the major components of the respiratory system? 10. What are the major components of the digestive system? 11. What are the major components of the urinary system? 12. What does the reproductive system consist of? 13. What is the function of the integumentary system? 14. What is the function of the skeletal-muscular system? 15. What is the function of the cardiovascular system? 16. What is the function of the respiratory system? 17. What is the function of the digestive system? 18. What is the function of the endocrine system?

19. What is the function of the urinary system? 20. What is the function of the reproductive system?

Exercise 14. Insert the missing words:

1. The body is divided into 11 major organ systems: integumentary, _____, muscular, nervous, endocrine, _____, lymphatic, respiratory, _____, urinary, and reproductive systems.

2. The skeletal system includes bones, associated _____, and joints.

3. It protects, _____, and allows body movement.

4. The muscular system consists of _____.

5. This system allows body _____.

6. The cardiovascular system includes heart, blood _____, and blood.

7. It transports _____.

Exercise 15. Make up the sentences using the following words and word-combinations:

1. The nervous system / brain / and / includes / spinal cord /nerves.

2. It / physiological / intellectual functions / controls / and.

3. Includes / respiratory passages / the respiratory system / lungs / and.

4. Between / it / exchanges / the blood / gases / and / the air.

5. Intestines / the digestive / mouth / system / consists of / esophagus / and / stomach. 6. Chemical / this / system / digestion / the mechanical / and / performs / processes / of.

Exercise 16. Speak on the systems of the human body.

Exercise 17. Translate the following sentences into English:

1. Покривна система складається зі шкіри, волосся, нігтів та потових залоз. 2. Ця система регулює температуру тіла та запобігає зневоднюванню. 3. Скелетна система складається кісток, хрящів та суглобів. 4. М’язова система складається із м’язів, дозволяючи людині пересуватися. 5. Серцево-судинна система складається з серця, кров’яних судин та крові, що транспортує поживні речовини

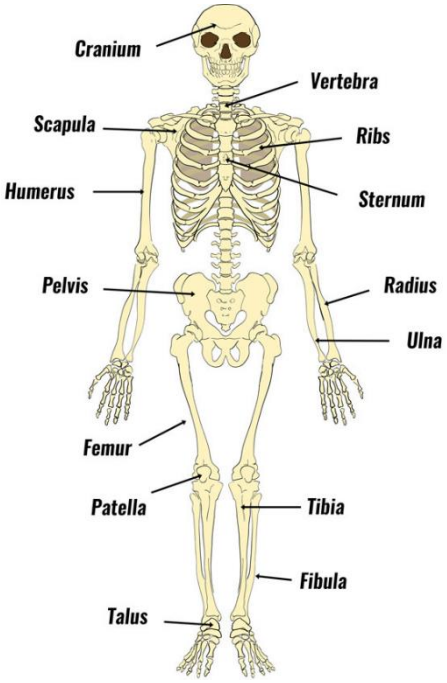
до всіх частин організму. 6. Дихальна система сформована легенями. 7. Травна система виконує хімічні та механічні процеси травлення.

3.2. SKELETON AS A FRAMEWORK OF THE BODY

Active vocabulary

1. skeleton	скелет
2. framework	каркас
3. bone	кістка
4. skull	череп
5. clavicle	ключиця
6. scapula	лопатка
7. rib	ребро
8. breastbone	грудина
9. pelvis	таз
10. spine	спинний хребет
11. vertebra	хребець
12. raduis	променева кістка
13. humerus	плечова кістка
14. ulna	ліктьова кістка
15. femur	стегнова кістка
16. tibia	гомілкова кістка
17. joint	суглоб
18. fibula	мала гомілкова кістка
19. patella	колінна чашечка
20. extremity (limb)	кінцівка

Exercise 18. Look at the picture of the skeleton and try to memorize the location of the bones.



Exercise 19. Read the text and translate it. Describe the human skeleton.

SKELETON

The skeleton is the framework of the body. The skeleton supports the soft parts and protects the internal organs from injury. There are more than two hundred bones of different sizes and shapes in the skeleton.

The skeleton may be divided into three main groups of bones: the bones of the head, trunk and extremities. The bones are connected together by joints, cartilages and ligaments. The joints allow the bones to move. Ligaments connect one bone to another. Tendors attach bones to muscles. Muscles contract and move skeleton parts.

The head bones are called the skull. The skull consists of many cranial bones. The upper part of the trunk is formed by the ribs and breastbone in front and the vertebrae in the spine. The lower part is the pelvis.

The bones of the trunk are connected with the upper extremities by the clavicles and scapulas. The upper extremity consists of the humerus, the radius with the ulna and the hand bones. The lower extremity has the femur, the tibia with the fibula and the foot bones.

We do all kinds of work with our upper extremities. And we can walk, run and jump with our lower extremities.

Exercise 20. What words are defined below?

1. The framework of bones.
2. The human body apart from the head and extremities.
3. The upper part of the trunk.
4. The lower part of the trunk.
5. The part of the head which contains the brain.
6. The upper extremities.
7. The lower extremities.
8. The end of the arm.
9. The part of the leg on which we walk.
10. The part of the upper extremity from the shoulder to the hand.

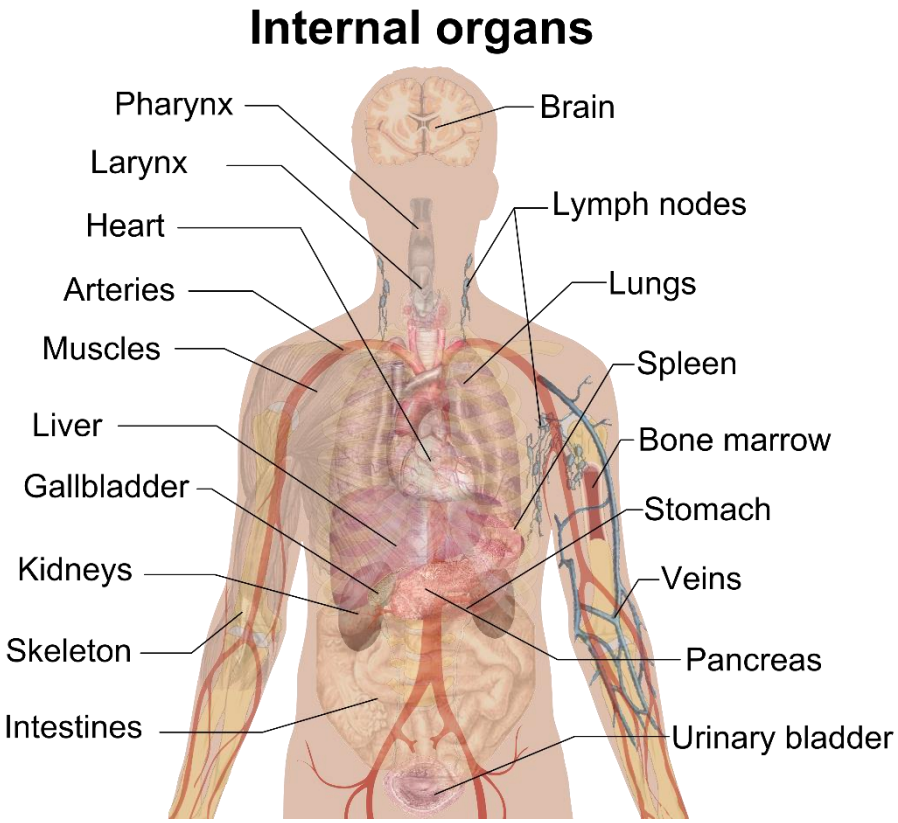
Exercise 21. Ask questions on the text "Skeleton" and retell the text.

Exercise 22. Communicative situation. Try to explain to your younger brother how we can move, make things, do different types of work, run, jump, walk.

Exercise 23. Read the words and remember them.

internal organ	внутрішній орган
lung	легеня
heart	серце
pharynx	глотка
sternum	грудина
blood	кров
esophagus	стравохід
diaphragm	діафрагма
tomach	шлунок
liver	печінка
poison	отрута
gall bladder	жовчний міхур

bacterium	мікроб, бактерія
digestion	травлення
pancreas	підшлункова залоза
spleen	селезінка
kidney	нирка
intestine	кишка, кишечник
bladder	сечовий) міхур
to differ	відрізнятись
to destroy	руйнувати
abdominal cavity	черевна порожнина
large intestine	товста кишка
small intestine	тонка кишка
sex gland	статева залоза



Exercise 24. Read and translate the following words.

Human body, trunk, limb, extremity, upper, lower, to consist of, to contain the brain, skull, forehead, mouth, lip, cheek, chin, external, internal, gum, tooth (teeth), tongue, palate, to connect, neck, chest, abdomen, lung, heart, gullet, to breathe, beat, abdominal, cavity, stomach, liver, spleen, intestine, kidney, gallbladder, bladder, bone, skeleton, to support, soft, to protect, injury, muscle, shoulder, forearm, elbow, wrist, thumb, hip, thigh, knee, calf, ankle, skin.

Exercise 25. Read the text. Name the internal organs. Retell the text.

3.3. INTERNAL ORGANS

All internal organs are situated in the chest and abdomen. The chest is separated from abdomen by the diaphragm. The principal organs of the chest are the gullet, the heart at lungs. The gullet connects the pharynx and the stomach.

There are two lungs – one in each half of the chest. They differ in size. The right lung is larger than the left one. There is the heart between the lungs behind the breastbone. The heart pumps the blood to the whole body.

The lower part of the trunk is the abdominal cavity. The principal organs here are the stomach, the liver, two kidneys, the gallbladder, the pancreas, the spleen, the small and large intestines, the bladder and internal sex glands.

There is the liver with the gallbladder in the right upper abdominal part. The liver is the largest and heaviest organ in the body. It works over all the products of digestion. The liver destroys poisons and bacteria which get into the blood. There is the stomach, the pancreas, the spleen in the left upper part of the abdominal cavity. Behind them there are the right and left kidneys at the back.

The small and large intestines occupy all the lower abdomen. Here is also the bladder and sex glands.

Each internal organ of the body plays a specific role in the organism.

The branch of medicine which studies internal organ diseases is called internal medicine.

Exercise 26. Answer the following questions.

1) Where is the chest?

2) What is the lower part of the trunk?

3) What is there between the chest and abdomen?

4) What are the principal organs of the chest?

5) What are the principal organs of the abdominal cavity?

6) What can you say about the lungs?

7) What is the function of the heart?

8) What is the function of the liver?

9) Does each organ have its specific role?

10) What is the name of the branch of medicine which deals with internal organ diseases?

Exercise 27. Complete the sentences.

1. The external organs are _____.
2. The internal organs are _____.
3. The organs of the chest are _____.
4. The organs of the abdominal cavity are _____.
5. The organs of the head are _____.

Exercise 28. Put the following parts of the body into the appropriate column.

heart skull ribs spine lungs pelvis liver kidneys bladder scapula spleen thorax intestine stomach pancreas patella gallbladder tibia vertebra larynx brain fibula

Bones	**Internal organs**

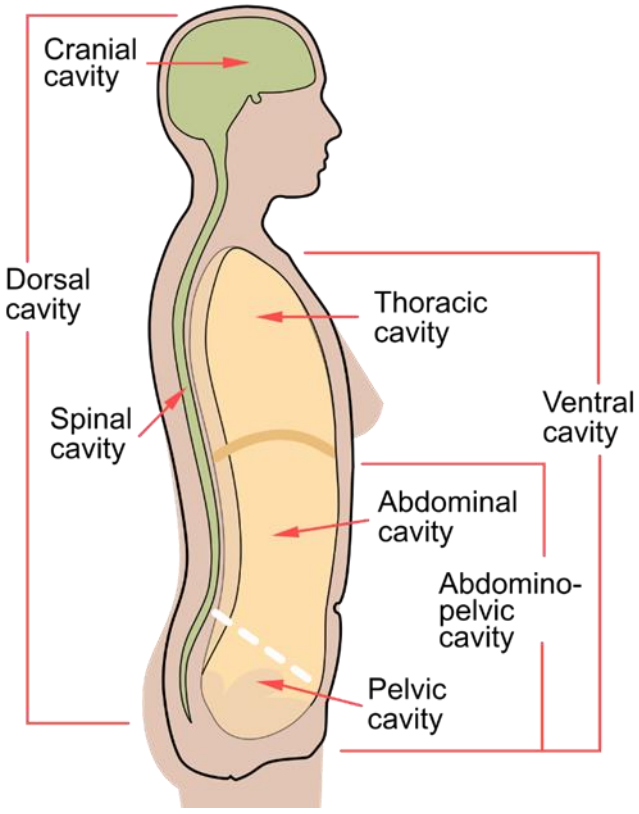
Exercise 29. Give the definition to the terms as in the example.

Example. Wrist is a part of the upper limb, a joint that connects the forearm with the hand.

1. Hip _____
2. Neck _____
3. Arm _____
4. Ankle _____
5. Knee _____
6. Thorax_____
7. Thigh _____
8. Shoulder _____
9. Foot _____
10. Shin _____

3.4. BODY CAVITIES

Exercise 30. Read and study the following information about body cavities.



The human body, like that of many other multicellular organisms, is divided into a number of body cavities. A body cavity is a fluid-filled space inside the body that

holds and protects internal organs. Human body cavities are separated by membranes and other structures. The two largest human body cavities are the ventral cavity and the dorsal cavity.

The ventral cavity is at the anterior, or front, of the trunk. Organs contained within this body cavity include the lungs, heart, stomach, intestines, and reproductive organs. The ventral cavity allows for considerable changes in the size and shape of the organs within it as they perform their functions. For example, organs such as the lungs, stomach, or uterus can expand or contract without distorting other tissues or disrupting the activities of nearby organs. The ventral cavity is subdivided into the thoracic and abdominopelvic cavities.

The thoracic cavity fills the chest and is subdivided into two pleural cavities and the pericardial cavity. The pleural cavities hold the lungs, and the pericardial cavity holds the heart.

The abdominopelvic cavity fills the lower half of the trunk and is subdivided into the abdominal cavity and the pelvic cavity. The abdominal cavity holds digestive organs and the kidneys, and the pelvic cavity holds reproductive organs and organs of excretion.

The dorsal cavity is at the posterior, or back, of the body, including both the head and the back of the trunk. The dorsal cavity is subdivided into the cranial and spinal cavities.

The cranial cavity fills most of the upper part of the skull and contains the brain.

The spinal cavity is a very long, narrow cavity inside the vertebral column. It runs the length of the trunk and contains the spinal cord. The brain and spinal cord are protected by the bones of the skull and the vertebrae of the spine. They are further protected by the meninges, a three-layer membrane that encloses the brain and spinal cord. A thin layer of cerebrospinal fluid is maintained between two of the meningeal layers. This clear fluid is produced by the brain, and it provides extra protection and cushioning for the brain and spinal cord.

Exercise 31. Answer the questions and do the following tasks.

1. What is a body cavity?
2. Compare and contrast ventral and dorsal body cavities.
3. Identify the subdivisions of the ventral cavity and the organs each contains.

4. Describe the subdivisions of the dorsal cavity and its contents.

5. Identify and describe all the tissues that protect the brain and spinal cord.

6. What do you think might happen if fluid were to build up excessively in one of the body cavities?

7. Explain why a woman's body can accommodate a full-term fetus during pregnancy, without damage to her internal organs.

8. Which body cavity does the needle enter in a lumbar puncture?

9. What are the names given to the three body cavity divisions where the heart is located?

10. What are the names given to the three body cavity divisions where the kidneys are located?

11. What is the name of the fluid that protects the brain and spinal cord?

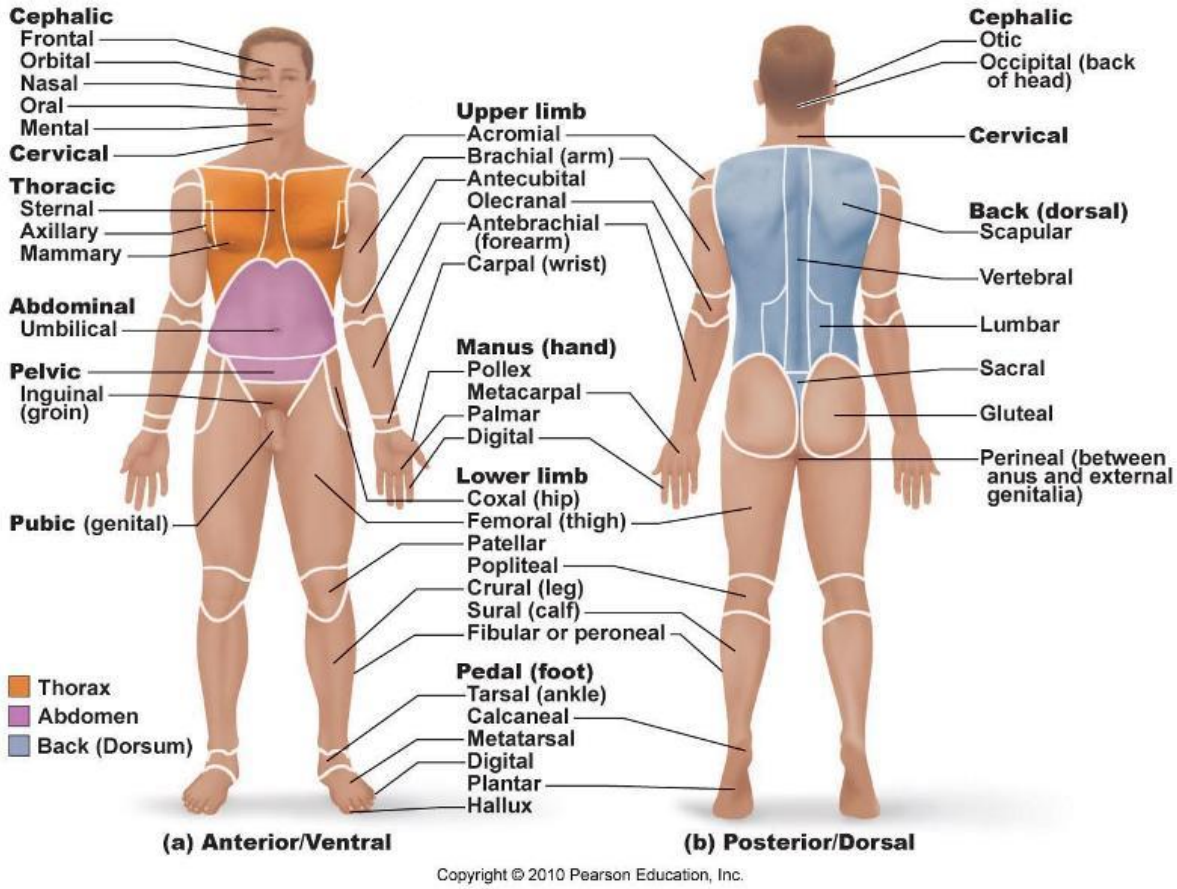
Exercise 32. Read and translate the following words:

Pelvic; thigh; forearm; shoulder; girdle; approach; limb; thorax; superficial; chest; trunk; wrist; division; elbow; abdomen; stomach; intestine; knee, pelvic; thorax; wrist; elbow; hip; shoulder; leg; knee; superficial; limb; forearm; girdle; quadrant; pectoral; ankle; lower; associated; clinician.

Exercise 33. Translate the following words into English:

Поділ, розподіл; лицьова частина; тулуб; черевна порожнина; пояс; передпліччя; коліно; гомілка; належати; тазовий; зап'ясток; нижня кінцівка; плече; серце; печінка; селезінка; кишківник; сечовий міхур; легені; відповідний.

Exercise 34. Study the major regions of the body.



3.5. BODY REGIONS

Exercise 35. Read and translate the following text:

The body is commonly divided into several regions. They are the head, trunk, and limbs.

The head is divided into the cranial and the facial parts. The facial bones form the structure of the face. The forehead, the temples, eyes, eyebrows, the cheeks, the cheekbones, nose, oral cavity and chin compose the face.

The upper limb (or extremity) is divided into the arm, elbow, forearm, wrist, and hand. The arm extends from the shoulder to the elbow, and the forearm extends from the elbow to the wrist. The upper limb is attached to the body by the shoulder, or pectoral girdle (the bony structure by which the limbs are attached to the body). The lower limb is divided into the thigh, knee, leg, ankle, and foot. The thigh extends from the hip to the knee, and the leg extends from the knee to the ankle.

The lower limb is attached to the body by the hip, or pelvic girdle. Note that the terms arm and leg, contrary to popular usage, refer only to a portion of the respective limb.

The trunk can be divided into the thorax (chest), abdomen (region between the thorax and pelvis), and pelvis (the inferior end of the trunk, associated with the hips). The major organs are located in the trunk, such as: the heart, the lungs, the stomach, the liver, the spleen, the large and small intestines, the kidneys, the gallbladder, and bladder. The abdomen is often subdivided superficially into four quadrants. They include the upper right, upper left, lower right, and lower left quadrants. The four-quadrant approach is commonly used by clinicians to describe the location of some organs or of a clinical problem such as pain or a tumor.

Exercise 36. Answer the questions:

1. What regions is human body divided into? 2. What parts is the upper limb divided into? 3. What parts does the lower limb consist of? 4. What girdle connects the upper limb with the trunk? 5. What girdle connects the lower limb with the trunk? 6. What parts is the trunk divided into? 7. What internal organs are located in the trunk?

Exercise 37. Insert the missing words:

1. The _ is divided into several regions. 2. The upper limb is divided into the arm, _, and hand. 3. The upper limb is attached to the body by the _. 4. The lower limb is divided into the _, leg, and foot. 5. The lower limb is attached to the body by the _ . 6. The _ can be divided into the thorax, abdomen, and pelvis. 7. The abdomen is often subdivided superficially into four _. 8. The four-quadrant _ is commonly used by clinicians to describe the location of underlying _ or of a clinical problem such as pain or a tumor.

UNIT IV. SYSTEMS OF THE HUMAN BODY

4.1. CIRCULATORY (CARDIOVASCULAR) SYSTEM. BLOOD.

Speaking

1. What are the main organs of cardiovascular system?
2. How does blood move through the circulatory system?
3. What does the blood consist of?
4. What are the main functions of blood?
5. What blood types do you know?

Part 1. BLOOD

Active Vocabulary

1. connective tissue	сполучна тканина
2. clot	згусток крові, тромб
3. waste products	відходи, продукти розпаду
4. cell fragments	фрагменти клітин
5. corpuscles	тільця
6. platelet (thrombocyte)	тромбоцити
7. leukocyte (white blood cells)	лейкоцити (білі кров'яні тільця)
8. erythrocyte (red blood cells)	еритроцити (червоні кров'яні тільця)
9. dissolved component	розчинений компонент
10. nutrient	поживна речовина
11. total weight	загальна вага
12. total blood volume	загальний об’єм крові
13. approximately	приблизно
14. enzymes	ферменти
15. fluid balance	баланс рідини
16. blood loss	крововтрата
17. albumin	альбумін

18. globulin	глобулін
19. fibrinogen	фібриноген
20. serum	сироватка

Exercise. 1. Translate the following words and word-combinations into Ukrainian:

Connective tissue; corpuscle; pale yellow fluid; clot-producing; platelet; fluid matrix; remaining fluid; average adult; however; waste products; maintenance; suspended molecules; to protect against; remove; site of infection; slightly; more than half; body's total weight; total blood volume; approximately; to be classified; corpuscles; platelet; hormone; enzyme; leukocyte; thrombocyte; erythrocyte; plasma; dissolved component; nutrient; maintenance; formed elements; major category.

Exercise. 2. Read and translate the following text:

BLOOD

Blood is classified as a connective tissue, consisting of cells and cell fragments surrounded by a liquid matrix. The total blood volume in the average adult is approximately 4 to 5 L in females and 5 to 6 L in males. Blood makes up approximately 8% of the body's total weight.

The cells and cell fragments are the formed elements, and the fluid matrix is the plasma. The formed elements of the blood include several types of highly specialized cells and cell fragments. They are grouped into three major categories. Approximately 95% of the volume of the formed elements consists of erythrocytes (red blood cells or corpuscles). The remaining 5% consists of leukocytes (white blood cells or corpuscles) and platelets (cell fragments), which are also called thrombocytes.

Plasma is a pale yellow fluid accounting for slightly more than half the total blood volume and consisting of approximately 92% water and 8% dissolved or suspended molecules. Plasma contains proteins such as albumin, globulin, and fibrinogen. When the proteins that produce clots are removed from the plasma, the remaining fluid is called serum. In addition to the suspended molecules, plasma also contains a number of dissolved components such as salts, nutrients, gases, waste products, hormones, and

enzymes. Water enters the plasma from the digestive tract, from interstitial fluids, and as a by-product of metabolism. Excess water is removed from the plasma through the kidneys, lungs, intestinal tract, and skin. Solutes in the plasma come from several sources such as the liver, kidneys, intestines, endocrine glands, and immune tissues such as the spleen.

The functions of the blood can be placed into the categories of transportation, maintenance, and protection. Blood transports gases, nutrients, waste products, and hormones. It is involved in the regulation of homeostasis and the maintenance of pH, body temperature, fluid balance, and electrolyte level. Blood protects against diseases and blood loss.

Exercise 3. Translate the following words and word-combinations into English:

Розчинені компоненти; вага тіла людини; загальнй об'єм крові; утворювати згустки; міжклітинний матеріал; ферменти; сироватка; складатися з; включати кілька типів; поділятися на; червоні кров'яні тільця; кров'яні пластинки; білі кров'яні тільця; поживні речовини; транспортувальна функція; захисна функція; білки; видаляти.

Exercise 4. Complete the following sentences:

1. Blood is a type of _ tissue whose cells are suspended in a liquid intracellular material. 2. Blood consists of a liquid portion called _ and a solid portion. 3. This portion also named as the cellular fraction includes _, _, _. 4. _ are essential for the clotting of blood. 5. _ are the most numerous blood cells. 6. The blood plays an important role in _ homeostasis.

Exercise 5. Answer the following questions:

1. What type of tissue is the blood? 2. What is the total blood volume in an average adult? 3.What does the blood consist of? 4. What is the plasma? 5. What does the plasma contain? 6. What is blood serum? 7. What major categories are the formed elements grouped into? 8. What blood cells are the most numerous? 9. What are the major functions of the blood?

Exercise 6. Read the following terms and try to match them with the Ukrainian equivalents. Memorize the meaning of the term-element "h(a)emo-" from Greek "blood".

Hemoglobin, hemoconcentration, hemorrhage, hemocyte, hemocytometer, hemodiagnosis, hemogram, hemology, hemomediastinum, hemopathy, hemophobia, hemodynamics.

Крововилив, кровотеча; гематологія; гемодинаміка; гемофобія (патологічна боязнь кровотечі чи виду крові); гемопатія; гемоглобін; гемоцитометр; гемодіагностика (діагноз, що ґрунтується на вивченні крові); гемограма (формула крові); витікання крові у середостіння; гемоконцентрація (згущення крові); клітина крові.

Exercise 7. Pronounce and memorize the words to the theme studied:

Biconcave - подвійноввігнутий; spherical - кулястий, сферичний; stain - забарвлення; release - вивільняти; histamine - гістамін; promote - сприяти, допомагати, підтримувати; inflammation- запалення; heparin - гепарин; prevent - попереджувати, запобігати; worm - черв'як; parasite - паразит; debris ['debrI:] - залишки органічних речовин; plug - пробка.

Exercise 8. Choose the proper terms from the box for the definitions:

thrombocytes, serum, corpuscles, erythrocytes, lymphocytes, plasma, iron, protein

1. Liquid portion of blood containing water, proteins, salts, nutrients, hormones, vitamins. 2. Tiny cells, which are necessary for blood clotting. 3. These cells are biconcave disks made in the bone marrow, they transport oxygen. 4. Plasma minus the clotting proteins and clotting cells. 5. "Little body" refers to blood cells. 6. This substance is necessary for the synthesis of hemoglobin, is absorbed from small intestines; insufficiency of this substance may result in anemia. thrombocytes, serum, corpuscles, erythrocytes, lymphocytes, plasma, iron, protein.

Exercise 9. Read, translate and study the information from the table.

FORMED ELEMENTS OF BLOOD

CELL TYPE	DESCRIPTION	FUNCTION
Erythrocytes	Biconcave disk; no nucleus; 7-8 μm in diameter	Transports oxygen and carbon dioxide
Leukocyte Neutrophil	Spherical cell; nucleus with two to four lobes connected by thin filaments; cytoplasmic granules stain a light pink or reddish-purple; 12-15 μm in diameter	Phagocytizes microorganisms
Basophil	Spherical cell; nucleus with two indistinct lobes; cytoplasmic granules stain blue-purple; 10-12 μm in diameter	Releases histamine, which promotes inflammation, and heparin, which prevents clot formation
Eosinophil	Spherical cell; nucleus often with two lobes; cytoplasmic granules stain orange-red or bright red; 10-12 μm in diameter	Releases chemicals that reduce inflammation; attacks certain worm parasites
Lymphocyte	Spherical cell with round nucleus; cytoplasm forms a thin ring around the nucleus; 6-8 μm in diameter	Produces antibodies and other chemicals responsible for destroying microorganisms;

		responsible for allergic reactions, graft rejection, tumor control, and regulation of the immune system
Monocyte	Spherical cell; nucleus round, kidney, or horse-shoe shaped; contains more cytoplasm than does lymphocyte; 10-15 μm in diameter	Phagocytic cell in the blood; leaves the blood and becomes a macrophage, which phagocytizes bacteria, dead cells, cell fragments, and debris within tissues
Platelet	Cell fragments surrounded by a cell membrane and containing granules; 2-5 μm in diameter	Forms platelet plugs; releases chemicals necessary for blood clotting

Exercise 10. Translate the following sentences without using a dictionary:

1. Red blood cells are tiny, biconcave disks that are thin near their centers and thicker around their rims. 2. This special shape is related to the red cell's function of transporting gases. 3. Each red blood cell is about one-third hemoglobin by volume, and this substance is responsible for the color of the blood. 4. The number of red blood cells varies from time to time even in healthy individuals, the normal range for adult males is 4.2 to 5.8 million cells per mm3, and that for adult females is 3.6 to 5.2 million cells per mm. 5. The number of red blood cells generally increases followingexercises, a large meal, a rise in temperature, or an increase in altitude (висота над рівнем моря).

6. After an infant is born, the red blood cells are produced almost exclusively by the tissue that lines the spaces within the red bone marrow. 7. White blood cells function primarily to control various disease conditions. 8. Normally, five types of white cells can be found in the circulating blood. 9. They are distinguished by their size, the nature of their cytoplasm, the shape of their nucleus, and their staining characteristics. 10. The procedure used to count white blood cells is similar to thatused for counting red cells. Normally, there are from 5.000 to 10.000 white cells per mm3 of human blood. 11. Since the total number of white blood cells may change in response to abnormal conditions, white blood cells count is of clinical interest.

Exercise 11. Are these statements true (T), false (F)? Write true sentences.

1. Blood can be separated into solid and liquid portions. **(T/F)**

2. The solid cellular portion is mostly white blood cells. **(T/F)**

3. Red blood cells function to control disease conditions. **(T/F)**

4. The plasma proteins are classified into three major groups: albumins, globulins, and fibrinogens. **(T/F)**

5. Total blood volume does not vary by the sex (male or female). **(T/F)**

PART II. CIRCULATORY (CARDIOVASCULAR) SYSTEM

Active Vocabulary

№	Word	Translation
1.	circulatory	кровоносний, пов'язаний з кровообігом
2.	blood	кров
3.	to mean	означати
4.	artery	артерія
5.	vein	вена
6.	capillary	капіляр
7.	chamber	порожнина (серця)
8.	atrium	передсердя (атріум)
9.	heart	серце

10.	auricle	передсерцеве вушко
11.	ventricle	шлуночок (серця)
12.	valve	клапан (серця)
13.	tricuspid valve	клапан тристулковий (передсерцевошлуночковий правий)
14.	mitral valve	мітральний, двостулковий клапан (передсерцевошлуночковий лівий)
15.	septum	перегородка (серця)
16.	vessel	судина
17.	systole	систола (серця)
18.	diastole	розширення серця
19.	hypertension	гіпертензія
20.	hypotension	гіпотензія
21.	lung	легеня
22.	aorta	аорта
23.	fluid	рідина
24.	plasma	плазма
25.	vascular	судинний
26.	humor	рідина (тканини)
27.	bloodstream	кровообіг
28.	hemoglobin	гемоглобін – пігмент крові людини
29.	carbon dioxide	вуглекислий газ
30.	oxygen	кисень
31.	corpuscle	тільце
32.	naked eye	неозброєне око
33.	continuous circulation	постійна церкуляція

Exercise 1. Read and memorize the given expressions and their Ukrainian equivalents. You will come across these expressions in the following text and they will be useful to understand it better.

1. It can be thought as – це може вважатись
2. The only route of communication – єдиний спосіб сполучення, з'єднання
3. To be supplied with smth. – постачатись чимось
4. To distribute smth. by means of smth. – розподіляти щось шляхом …
5. To form a close net-work – утворювати компактну сітку
6. Gradually joining together – поступово з'єднуючись
7. Too small to be seen – надто малі, щоб бути поміченими
8. To convert food to energy – перетворювати їжу на енергію

Exercise 2. Translate the following words and word-combinations into Ukrainian.

The system of blood circulation; the cardiovascular system; the heart; the arteries; the veins; capillaries; hollow muscle; four chambers; valve separates chambers; route of communication between these two parts of the heart; two isolated pumps; to be supplied with oxygen; to receive blood from the veins; well-oxygenated blood; to distribute blood to the entire body; the lesser circulatory system; the greater circulatory system; the dissolved nourishment; to nourish something; the impurities from the tissues; a close net-work; to join gradually; a red fluid; blood coagulates when it escapes.

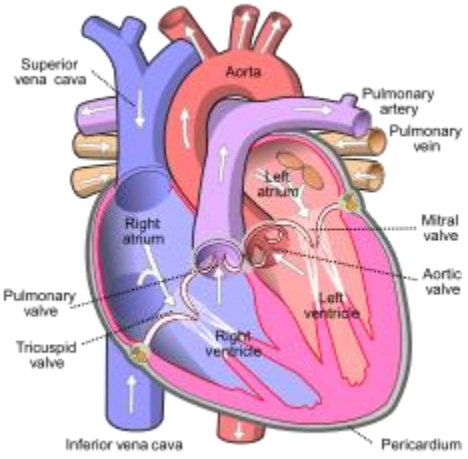
Exercise 3. Match the words with their definitions.

1. Heart	a) a system of organs that includes the heart, blood vessels, and blood which is circulated throughout the entire body of a human
2. aorta	b) two large veins (great vessels) that return deoxygenated blood from the body into the heart.
3. circulatory system	c)a blood vessel that carries blood away from the heart

4. vena cava	d)a blood vessel that carries blood towards the heart
5. pulmonary	e) the organ in your chest that sends the blood around your body
6. valve	f) having to do with the lungs
7. capillary	g) a flap in a bodily system that allows passage of material in one direction but prevents passage in other direction
8. artery	h) upper chamber of the heart that receive blood from the veins and push it down into the ventricles
9. vein	i) the smallest kind of blood vessel in the body
10. atrium	j) the main artery (thick tube carrying blood from the heart) that takes blood to the other parts of the body

Exercise 4. Read and translate the following text.

THE CIRCULATORY (CARDIOVASCULAR) SYSTEM



The cardiovascular system is the system of blood circulation. Hence, by the cardiovascular system is meant the heart, the arteries, the veins, and capillaries of the human body.

Basically, the heart is a hollow muscle located in the thoracic cavity between the lungs. The heart is responsible for the circulation of the blood. It is known that the heart

is a pump. But it is an extraordinary pump. It weighs only about a pound but the heart of a healthy 70-kg person pumps about 7200 L of blood each day at rate of 5 L per minute. If the heart loses its ability to pump blood for even a few minutes, the life of the individual is in danger. The heart actually is divided into four chambers. The right heart consists of an upper chamber called an atrium (with the auricle) and a lower chamber called a ventricle. Between these two chambers is a one-way valve, called the tricuspid valve. The left heart has two similar chambers, but the valve that separates its chambers is called the mitral valve. Although the heart is a unit, anatomically and functionally, it can be thought of as two isolated pumps – the "right heart" and the "left heart". Normally the only route of communication between these two parts of the heart is the lung. The contraction of these muscles causes the blood to be pumped.

The right heart receives blood from the veins and pumps it into the lung by way of the lesser circulatory system. In the lung the blood is supplied with oxygen. Then it moves into the left heart. From the left heart the well-oxygenated blood is pumped into a large artery called the aorta, which distributes it to the entire body by means of the greater circulatory system. The blood is returned to the heart by means of the veins. A continuous circulation is thus kept up. The walls of the capillaries are so thin that the dissolved nourishment, which comes from the digestive system, and the oxygen, which comes from the lungs and is contained in the blood, can pass through them into the tissues of the body and so nourish it, while the impurities from the tissues are taken up by the capillaries and are carried away in the blood. The capillaries form a close net-work all over the body, and, gradually joining together and getting larger, they become veins.

The tissue of the heart consists of three layers. The exterior layer is the thin epicardium. The middle layer is the myocardium, the heart muscle itself. The inner lining of the heart is the endocardium, a thin, smooth structure. The pericardium is a fibrous sac that surrounds the heart. In the space between the pericardium and the epicardium there is a small amount of fluid. The heart rate varies depending on activity at any given moment. The control mechanism for the heart rate involves electrical impulses. One of the four chambers of the heart, the right atrium, contains a group of cells called the sinus node. The sinus node produces electrical impulses that signal the

muscle of the heart to contract in the pumping cycle. When a person is at rest, the heart pumps more slowly and at a regular rate, about 60 to 80 beats per minute. When a person runs, climbs stairs, or otherwise exert yourself, the sinus node issues electrical "instructions" to increase the pace of the heart in order to provide the muscles and other tissues with the necessary additional blood and its supply of oxygen. The heart rate may increase up to 200 beats per minute if you exert yourself strenuously. The heart rate may be affected by various factors including tobacco use, caffeine-containing foods, alcohol, and a number of drugs. In addition, the cardiac disorders may produce heart rate problems.

The blood is a red fluid, which coagulates when it escapes from a blood vessel. It consists of colorless fluid, called plasma or serum, and many millions of minute bodies, too small to be seen by the naked eye, which give the blood its color and substance, the corpuscles.

Exercise 5. Put the sentences in the order they appear in the text.

1.	The right heart consists of an upper chamber called an atrium and a lower chamber called a ventricle.	
2.	The capillaries form a close net-work all over the body.	
3.	The blood is returned to the heart by means of the veins.	
4.	The blood is a red fluid, which coagulates when it escapes from a blood vessel.	
5.	The right heart receives blood from the veins and pumps it into the lung	
6.	The heart is a hollow muscle which is divided into four chambers.	

7.	From the left heart the well-oxygenated blood is pumped into a large artery called the aorta.	
8.	Between these two chambers is a one-way valve, called the tricuspid valve.	
9.	The only route of communication between these two parts of the heart is the lung	
10.	The cardiovascular system is meant the heart, the arteries, the veins, and capillaries of the human body.	
11.	The exterior layer is the thin epicardium.	
12.	The control mechanism for the heart rate involves electrical impulses.	
13.	If the heart loses its ability to pump blood for even a few minutes, the life of the individual is in danger.	
14.	When a person is at rest, the heart pumps more slowly and at a regular rate	
15.	It weighs only about a pound but the heart of a healthy 70-kg person pumps about 7200 L of blood each day.	

Exercise 6. Complete the sentences with the words and phrases given below.

Circulatory system carries 1) _____ in blood to all parts of the body. Blood begins its journey in 2) _____, which beats 3) _____ it to the rest of the body. 4)_____ control how blood moves through the heart. Blood picks up oxygen in 5) _____ by traveling through the pulmonary artery. It then leaves the heart through 6) _____, the body's largest artery. Blood flows throughout the body in 7) _____. At the end of arteries are tiny 8) _____. Here, oxygen moves to parts of the body. 9)_____ without oxygen returns to the heart in veins. The largest of these, the vena cava, empties into the heart's right 10) _____. Then the cycle can begin again.

(Valves; blood; to pump; the aorta; the lungs; capillaries; atrium arteries; the heart; oxygen)

Exercise 7. Are these statements true (T), false (F)? Give true sentences.

1. The respiratory system is the system of blood circulation. **(T/F)**

2. The heart is a hollow muscle which is divided into five equal chambers. **(T/F)**

3. The heart of a healthy 70-kg person pumps about 5 L of blood per minute. **(T/F**)

4. The control mechanism for the heart rate involves electrical impulses. **(T/F)**

5. Between upper and lower chambers is a one-way valve, called the tricuspid valve. **(T/F)**

6. The valve that separates chambers is called the artery. **(T/F)**

7. The only route of communication between these two parts of the heart is the brain. **(T/F)**

8. Blood travels through the aorta to the lungs. **(T/F)**

9. Oxygen leaves blood through capillaries. **(T/F)**

10. The vena cava is the largest artery in the body**. (T/F)**

11. Vein is the smallest kind of blood vessel in the body. **(T/F)**

12. The blood is a colorless fluid, which coagulates when it escapes from a blood vessel. **(T/F)**

13. The walls of the capillaries are so thin that the dissolved nourishment, which comes from the circulatory system. **(T/F)**

14. The cardiac disorders don't produce heart rate problems**. (T/F)**

15. The blood is returned to the heart by means of the arteries. **(T/F)**

Exercise 8. Read the text again. Answer these questions.

1. What does circulatory system consist of?
2. How does blood move through the circulatory system?
3. What is heart? What is its function?
4. What is the structure of the right heart?
5. What happens if the heart loses its ability to pump blood for even a few minutes?
6. What is the structure of the left heart?
7. What is the only route of communication between these two parts of the heart?
8. Does blood without oxygen return to the left or right atrium?
9. How many beats does the heart make per minute?
10. What part of heart receives blood from the veins and pumps it into the lung by way of the lesser circulatory system?
11. What is the sinus node? What does it produce?
12. What layers does the heart consist of?
13. Describe the route of the lesser circulatory system.
14. Describe the route of the greater circulatory system.
15. What is the heart rate affected by?
16. How does the dissolved nourishment from the digestive system pass into the tissues of the body?
17. What does blood consist of?

Exercise 9. Insert the missing prepositions (at; from; into; on; per; by; for; of; in; to).

1. The heart actually is divided _four chambers. 2.During physical exercises the amount _ blood pumped per minute increases several times. 3. If the heart loses its ability to pump blood _ even a few minutes, the life of the individual is in danger. 4. The superior vena cava and inferior vena cava carry blood _ the body to the right atrium. 5. The pericardium consists _ fibrous connective tissue. 6. Seven large veins carry blood _ the heart. 7. The heart rate varies depending _ activity _ any given

moment. 8. The heart makes from 60 to 72 beats _ minute. 9. _ some months the rate of your heartbeat will average about 83 beats per minute. 10. Blood consists of colorless fluid, called plasma or serum, and many millions of minute bodies, too small to be seen _ the naked eye.

Exercise 10. Make the following sentences negative. Then give the right information.

MODEL: The heart consists of three (four) chambers. The heart doesn't consist of three chambers. It consists of four chambers.

1. The muscular structure of the heart consists of atrioventricular (fibrous) bands. 2. The vascular system has three groups of arteries (vessels). 3. The vessels carrying blood to and from the tissues of the body compose the endocrine (general) system. 4. The heart contracts to pump blood through the vessels of the head (body). 5. The heart of a healthy person pumps about 7200 L of blood each month (day).

Exercise 11. Speak on:

1. The location and weight of heart;
2. The rate of heartbeat;
3. Heart chambers;
4. Layers of the heart.

Exercise 12. Translate the following sentences into English:

Серце знаходиться в грудній порожнині. Частота серцевих скорочень складає приблизно 72 ударів за хвилину. Серце складається з чотирьох камер. Вони розділені клапанами. Нижня камера називається шлуночком, а верхня – передсердям. Між правим шлуночком і правим передсердям знаходиться тристулковий клапан. Між лівим шлуночком і лівим передсердям розташований двостулковий (мітральний) клапан. Перегородка, яка відокремлює лівий шлуночок від правого шлуночка, називається міжшлуночковою перегородкою. Серце нагнітає кров по судинах до всіх частин тіла. Тканина серця складається з трьох шарів – епікарду, міокарду і ендокарду.

Exercise 13. Complete the following dialogues:

A.

– For generations, poets have endowed the human heart with a wide range of emotional abilities. But we (as medical students) must have deep knowledge of anatomy and physiology of human heart. That is why I would like to ask you some questions if you don't mind. What is a heart?

– _ (muscle)

– Where is the heart located?

– _ (thoracic cavity)

– What is the weight of the heart?

– _ (male – … grams, female – … grams)

– How many litres of blood does the heart pump each day?

– _ (7200 L)

B.

– I know that heart consists of some chambers. What are they?

– _ (atrium, ventricle)

– What is between the right atrium and the right ventricle?

– _ (tricuspid valve)

– What valve separates the left atrium from the left ventricle?

– _ (bicuspid valve)

– What valve separates the left ventricle from the right ventricle?

– _ (interventricular valve)

Exercise 14. Reproduce the similar dialogue.

PART III. CARDIOVASCULAR DISEASES. DRUG THERAPY OPTIONS

Speaking

1. What cardiovascular diseases do you know?
2. Number of cardiovascular diseases is increasing nowadays. What are the main reasons?
3. What should people do to prevent cardiovascular diseases?

Active Vocabulary

№	Word	Translation
1.	to radiate	віддавати
2.	heart attack	Серцевий напад
3.	atherosclerosis	атеросклероз
4.	plaque	наліт
5.	clot	згусток
6.	cholesterol	холестерин
7.	myocardial infarction	інфаркт міокарда
8.	hypertension	гіпертензія
9.	stroke	інсульт
10.	ischemic	ішемічний
11.	hemorrhagic	геморагічний
12.	angina	стенокардія
13.	dyspnea	задишка
14.	dizziness	запаморочення
15.	fatigue	втома
16.	sweat	піт
17.	cellular death	клітинна смерть
18.	workload	навантаження
19.	diuretic	сечогінний
20.	obesity	ожиріння

Exercise 15. Translate the following words and word-combinations into Ukrainian.

Numerous disorders of the heart; blood vessels; behavioral risk factors; unhealthy diet; physical inactivity; plaque builds up; the inner walls of the blood vessels; to thicken the arteries; to stop the blood flow; to cause any signs and symptoms; to lead to a medical emergency; to experience any signs and symptoms; to affect artery; the

most effective at decreasing cholesterol; to block the blood flow by a blood clot; pain radiating to the arms; survive their first heart attack; reduce high cholesterol levels; to lower blood pressure; to prevent further attacks.

Exercise 16. Read and translate the text.

CARDIOVASCULAR DISEASES AND DRUG THERAPY OPTIONS

Cardiovascular diseases (CVDs) are a group of numerous disorders of the heart and blood vessels. CVDs are the number one cause of death globally. The most important behavioral risk factors of heart disorders are unhealthy diet, physical inactivity, tobacco use and alcohol abuse.

Many of heart problems are related to a process called **atherosclerosis**. Atherosclerosis develops when plaque builds up on the inner walls of the blood vessels that supply the heart or brain. This buildup narrows and thickens the arteries. If a blood clot forms, it can stop the blood flow. Atherosclerosis usually doesn't cause any signs and symptoms until it leads to a medical emergency, such as a heart attack or stroke. However, if signs and symptoms are experienced, they depend on the artery affected and include: angina, dyspnea, arrhythmia, hypertension, fatigue, confusion, dizziness, sudden and severe headache, sleep problems and lack of energy.

In addition to lifestyle changes and low cholesterol diet effective drug therapy options are available. **Statins** are recommended for most patients. They are most effective at decreasing LDL (bad) cholesterol, but also have modest effects on reducing triglycerides (blood fats) and raising HDL (good) cholesterol.

A **heart attack** (a myocardial infarction) occurs when the blood flow to a part of the heart muscle is blocked by a blood clot. Symptoms of a heart attack include pain or discomfort in the center of the chest radiating to the arms, the left shoulder, elbows, lower jaw, or upper back. In addition the person may experience shortness of breath, vomiting, light-headedness, breaking into a cold sweat.

Most patients survive their first heart attack and return to their normal lives. Heart attack treatment involves a variety of drugs. **Anticoagulants** are used to inhibit the formation of blood clots by affecting blood coagulation factors. **Antiplatelet agents** keep blood clots from forming by preventing blood platelets from sticking together.

Beta blockers decrease the heart rate and cardiac output, which lowers blood pressure. **Combined alpha and beta blockers** are used for those patients experiencing a hypertensive crisis. **Calcium channel blockers** interrupt the movement of calcium into the cells of the heart and blood vessels, decrease the heart's pumping strength and relax blood vessels. **Cholesterol-lowering medications** (statins) reduce high cholesterol levels. **Digitalis glycosides** increase the force of the heart's contractions, which can be beneficial in heart failure and for irregular heartbeats. **Diuretics** cause the body to excrete excess fluids and sodium through urination. They help to relieve the heart's workload. **Vasodilators** relax blood vessels and increase the supply of blood and oxygen to the heart.

An **ischemic stroke** (the most common type) happens when a blood vessel that feeds the brain is blocked, usually by a blood clot. A **hemorrhagic stroke** occurs when a blood vessel within the brain bursts. The most common symptom of a stroke is sudden weakness or paralysis of the face, arm, or leg, most often on one side of the body. Other symptoms include sudden onset of: numbness of the face, arm, or leg; confusion, difficulty speaking or understanding speech; difficulty seeing with one or both eyes; difficulty walking, dizziness, loss of balance or coordination; severe headache; unconsciousness.

Tissue plasminogen activator (tPA) is a thrombolytic (a "clot-busting" drug) given to break up blood clots if the victim gets to the hospital within 3 hours of the first symptoms of an ischemic stroke. To prevent further attacks of stroke the doctor usually prescribes anticoagulants, antiplatelet medicines, statins, blood pressure medications, and medicines to deal with depression and pain.

Cessation of tobacco use, reduction of salt in the diet, consuming fruits and vegetables, regular physical activity and avoiding harmful use of alcohol generally reduce the risk of cardiovascular diseases.

Exercise 17. Put the sentences in the order they appear in the text.

1.	To prevent further attacks of stroke the doctor usually prescribes anticoagulants,	

	antiplatelet medicines, statins, blood pressure medications, and medicines to deal with depression and pain.	
2.	Beta blockers decrease the heart rate and cardiac output, which lowers blood pressure.	
3.	The most common symptom of a stroke is sudden weakness of the face, arm, or leg, most often on one side of the body.	
4.	Atherosclerosis usually doesn't cause any signs and symptoms until it leads to a medical emergency, such as a heart attack or stroke.	
5.	In addition the person may experience shortness of breath, vomiting, light-headedness, breaking into a cold sweat.	
6.	The most important behavioral risk factors of heart disorders are unhealthy diet, physical inactivity, tobacco use and alcohol abuse.	
7.	Statins are recommended for most patients.	
8.	If a blood clot forms, it can stop the blood flow.	
9.	Cessation of tobacco use, reduction of salt in the diet, consuming fruits and vegetables, regular physical activity and avoiding harmful use of alcohol generally reduce the risk of cardiovascular diseases.	
10.	Most patients survive their first heart attack and return to their normal lives.	

Exercise 18. Match the words from the text with their definitions (a-j).

1. abuse	a) a minute cell occurring in the blood of vertebrates and involved in clotting of the blood
2. buildup	b) disorientation
3. arrhythmia	c) a compound consisting of three fatty acids and glycerol
4. confusion	d) improper or excessive use; misuse
5. triglyceride	e) an oral lipid-lowering medicine
6. platelet	f) an accumulation, as of a material
7. statin	g) abnormal loss of muscle function or of sensation
8. paralysis	h) an irregularity in the force or rhythm of the heartbeat
9. depression	i) dissolution or destruction of a thrombus
10. clot-busting	j) the condition of feeling sad

Exercise 19. Complete the sentences with the words and phrases in the box.

heart digitalis tobacco reduction blood pressure cholesterol survive unconsciousness blood flow shortness of breath

1. The cardiologists advocate the _____ of salt in the diet.

2. A wide variety of medications known as antihypertensive can be bought by prescription to lower _____.

3. The patients who take aspirin to reduce the risk of _____ attack may diminish its action by taking anti-inflammatory drugs at the same time.

4. Mary has just received the telephone call from her cardiologist informing her about extremely high _____ levels.

5. Some heart attacks may be accompanied by _____.

6. A Welsh family known as the physicians of Myddvai collected different herbs and _____ was included in their prescriptions.

7. To _____ in the fight against likely complications of a stroke rehabilitation and family support should be greatly valued.

8. Atherosclerosis and thrombosis interfere with normal _____.

9. Overexertion, insomnia, physical inactivity, tobacco use and alcohol abuse may result in dyspnea known as _____.

10. The habit of smoking nicotine-rich leaves of _____ leads commonly to cardiovascular diseases.

Exercise 20. Are these statements true (T), false (F)? Write true sentences.

1. Cardiovascular diseases are a group of numerous disorders of the stomach and bowels. **(T/F)**

2. If a blood clot forms, it improves the blood flow. **(T/F)**

3. To prevent further attacks of stroke the doctor usually prescribes anticoagulants. **(T/F)**

4. The most important behavioral risk factors of heart disorders are unhealthy diet, physical inactivity, tobacco use and alcohol abuse. **(T/F)**

5. Tissue plasminogen activator is given if the victim gets to the hospital within 5 hours of the first symptoms of a hemorrhagic stroke. **(T/F)**

6. Most patients do not survive their first heart attack and die. **(T/F)**

7. Diuretics cause the body to retain fluids and sodium. **(T/F)**

8. A hemorrhagic stroke occurs when a blood vessel within the brain bursts. **(T/F)**

9. Statins are most effective at decreasing HDL (good) cholesterol. **(T/F)**

10. Atherosclerosis develops when plaque builds up on the inner walls of the blood vessels that supply the heart or brain. **(T/F)**

Exercise 21. Read the text again. Answer these questions.

1. What is number one cause of death globally?

2. What are the most important behavioural risk factors of cardiovascular disorders?

3. How can the human health be affected by atherosclerosis?

4. What therapeutic action do statins produce?

5. When does a myocardial infarction occur?

6. What drug options are available today for the treatment of heart attacks?

7. What prognosis does a cardiologist usually make after the patient suffers his first heart attack?

8. What type of a stroke is the most common? When does it develop?

9. What medications are prescribed to prevent further attacks of stroke?

10. What general recommendations are given to the patients to reduce the risk of cardiovascular diseases?

Exercise 22. Read the following text. Write down unknown medical terms and translate them into Ukrainian. Retell the text:

MYOCARDIAL INFARCTION

Myocardial infarction is a synonym for heart attack. Myo means "muscle", kardia means "heart", an infarct is an area of tissue that has died because of oxygen starvation. Myocardial infarction results from a prolonged lack of blood flow to a portion of the cardiac muscle resulting in a lack of oxygen and cellular death. Myocardial infarctions vary with the amount of cardiac muscle affected and the part of the heart that is affected. If blood supply to cardiac muscle is reestablished within 20 minutes, no permanent damage occurs. If the lack of oxygen lasts longer, cell death results. However, within 30 to 60 seconds after blockage of a coronary blood vessel, functional changes are obvious. The electrical properties of the cardiac muscle are altered, and the ability of the cardiac muscle to function properly is lost. The most common cause of myocardial infarction apparently is the formation of a thrombus that blocks a coronary artery. Coronary arteries narrowed by atherosclerotic lesions provide one of the conditions that increase the chances for myocardial infarctions. The emergency signs and symptoms of myocardial infarction are the following: intense, prolonged chest pain, often described as a feeling of heavy pressure; pain may extend beyond the chest to the left shoulder and arm, back, and even teeth and jaw; prolonged pain in upper abdomen; shortness of breath, fainting episode; and nausea, vomiting, and intense sweating. Heart attacks are the leading cause of death for both men and women worldwide. Important risk factors are previous cardiovascular disease, older age, tobacco smoking, high blood levels of certain lipids (triglycerides, low-density

lipoprotein) and low levels of high density lipoprotein (HDL), diabetes, high blood pressure, obesity, chronic kidney disease, heart failure, excessive alcohol consumption, the abuse of certain drugs, and chronic high stress levels.

Exercise 23. Complete the following dialogues:

A.

- Where is the blood entering the right side of the heart returning from?

- _ (tissues).

- What has the blood entering the right side of the heart been delivered by?

- _ (veins).

- What is the right atrium?

- _ (the receiving chamber).

- What atrium is the low-pressure pump?

- _ (the right atrium).

- What valve does the right atrium move the blood into the right ventricle through?

- _ (the tricuspid valve).

B.

- _?

- The pumping action moves the blood from the lungs to the left atrium.

- _? - The left atrium pumps the blood into the left ventricle.

- _?

- The left atrium pumps the blood into the left ventricle through the mitral valve.

- _?

- The left ventricle sends the oxygen-enriched blood into the aorta.

- _?

- Aorta is the principal artery of the human body that subdivides and delivers the blood to the body's tissues, including the brain, organs, and extremities.

Exercise 24. Compose the similar dialogues.

Exercise 25. Memorize the following words and word combinations and make up sentences with them.

1. Sharp pain гострий біль;

2. rheumatism ['ru:mqtIzm] ревматизм;
3. stitch pain колющий біль;
4. to ascend staircase підійматися сходами;
5. to tire стомлюватися;
6. disturbance порушення.

Exercise 26. Read and translate the following dialogue:

AT THE CARDIOLOGIST'S

Cardiologist: What do you complain of?

Patient: My heart often troubles me.

C.: Is your pain cutting or dull?

P.: I have a stitch pain in my heart.

C.: Do you have any difficulty in breathing?

P.: Yes, I do. I have breathlessness when ascending a staircase or walking quickly.

C.: What else troubles you?

P.: My temperature is not constant. It is rising by the evening. I often have a general malaise and get tired after some physical exertion.

C.: When did you notice these disturbances? When have the pains in your heart become constant?

P.: These disturbances appeared some years ago. My pains have become constant this year.

C.: What diseases did you suffer from in the past?

P.: In my childhood I often had quinsy but then my tonsils were removed. During some years ago I am ill with rheumatism. **C.:** Do you have a pain in your joints?

P.: Yes, I do. My hands and legs become periodically swollen and painful.

C.: Were you treated at a hospital?

P.: Yes, I was. Last year I was hospitalized and treated at the hospital. My diagnosis was rheumatism.

C.: Did you have any improvement after the treatment in the hospital?

P.: Yes, I did. Last summer I was treated at the sanatorium too and I felt well.

C.: Now strip to the waist, please. I'll examine you.

(After examination)

C.: You are seriously ill. Your main disease is rheumatism and that's why you must periodically be treated at a hospital. But at present you have to make electrocardiogram and to come to me. I'll administer you the treatment for your heart. I advise you to avoid intensive physical exertion. You should not be tired. Your diet has to be nourishing and containing many vitamins but it is limit in salt. Walk in the fresh air as much as possible.

Exercise 27. Reproduce the similar dialogue.

Exercise 28. What facts can you present to your group about:

The circulatory system; organs of the circulatory system; the heart; blood; cardiovascular diseases; drug therapy options.

4.2. RESPIRATORY SYSTEM

Part A

Speaking

1. What does respiratory system consist of?
2. What is respiration?
3. What respiratory diseases do you know?

Active Vocabulary

English	Ukrainian
1. alveolus	альвеола
2. breathing	дихання
3. bronchiole	бронхіола
4. bronchus	бронх
5. diaphragm	діафрагма
6. larynx	гортань
7. lung	легеня
8. mediastinum	середостіння
9. pharynx	глотка
10. pleura	плевра
11. respiration	дихання
12. trachea	трахея
13. ventilation	вентиляція
14. nasal cavity	носова порожнина
15. inhalation	вдихання
16. exhalation	видихання
17. lobe	частка
18. bronchial tree	бронхіальне дерево

Exercise 1. Read the following word combinations and translate them. Make up your own sentences with them.

To breath with lungs; pulmonary ventilation; nasal cavity; vocal organ; air movement; gas exchanges; respiratory rates; diffusion of gases; the preservation of life; interruption of breathing; to transport oxygen to the cells; by the circulating blood; to filter, to warm and to moisten air; subdivide again and again; to be covered with the membrane; tiny air sacs; cells and tissues; rhythm of respiration; allergy-causing things;

Exercise 2. Read and translate the text.

WHAT IS THE RESPIRATORY SYSTEM?

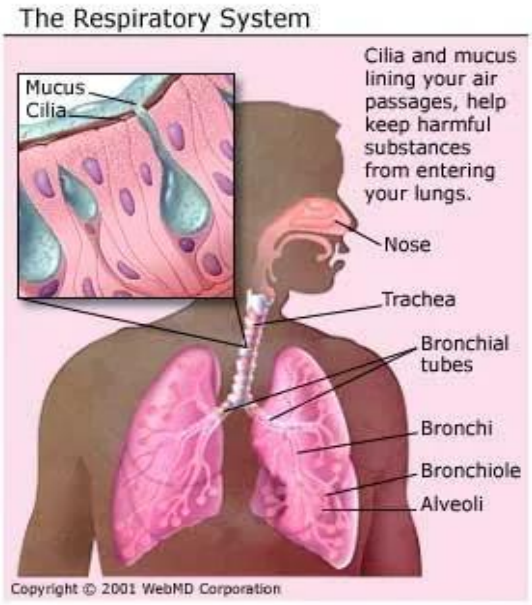
The respiratory system is the organs and other parts of your body involved in breathing. Breathing is of vital importance for the preservation of life. Any interruption of breathing for long time may cause death.

Respiration is the process when oxygen is obtained from the environment and transported to the cells, and carbon dioxide is exchanged from the cells.

Respiration includes three phases:

1. Pulmonary ventilation is normally accomplished by inspiration and expiration.
2. The diffusion of gases includes the passage of oxygen from air sacs into the blood and carbon dioxide out of the blood.
3. The transport of oxygen and carbon dioxide by the circulating blood.

PARTS OF THE RESPIRATORY SYSTEM



Respiratory system includes:

- Nose and the nasal cavity

- Mouth
- Throat (pharynx)
- Voice box (larynx)
- Windpipe (trachea)
- Diaphragm
- Lungs
- Bronchial tubes/bronchi
- Bronchioles
- Air sacs (alveoli)
- Capillaries

Nasal cavities filter, warm and moisten air, which we inhale. The pharynx (throat) carries air into the respiratory track and food into the digestive track. The larynx (voice organ) contains vocal cords. The trachea is the windpipe. The bronchi are the continuations of the trachea, they are two in number; they enter the lungs and then subdivide again and again making the bronchial tree. The smallest subdivisions of the bronchi are bronchioles. The lungs are covered with the membrane called pleura. The pleura not only encloses the lung but also lines the chest walls. Mediastinum is the space for heart, great blood vessels, esophagus, trachea, and lymph nodes; it is located between the lungs. The lungs consist of lobes, which subdivide into lobules. The tiny air sacs in the lungs are called alveoli.

The respiratory control centers, located in the medulla and pons of the brain stem, regulate the process of respiration. Respiration is regulated so that the level of oxygen, carbon dioxide, and acid are kept within certain limits. The control centers regulate the rate, depth, and rhythm of respiration.

How Do We Breathe?

Breathing starts when you inhale air into your nose or mouth. It travels down the back of your throat and into your windpipe, which is divided into air passages called bronchial tubes.

For your lungs to perform their best, these airways need to be open. They should be free from inflammation or swelling and extra mucus.

As the bronchial tubes pass through your lungs, they divide into smaller air passages called bronchioles. The bronchioles end in tiny balloon-like air sacs called alveoli. Your body has about 600 million alveoli.

The alveoli are surrounded by a mesh of tiny blood vessels called capillaries. Here, oxygen from inhaled air passes into your blood.

After absorbing oxygen, blood goes to your heart. Your heart then pumps it through your body to the cells of your tissues and organs.

As the cells use the oxygen, they make carbon dioxide that goes into your blood. Your blood then carries the carbon dioxide back to your lungs, where it's removed from your body when you exhale.

Inhalation and Exhalation

Inhalation and exhalation are how your body brings in oxygen and gets rid of carbon dioxide. The process gets help from a large dome-shaped muscle under your lungs called the diaphragm.

When you breathe in, your diaphragm pulls downward, creating a vacuum that causes a rush of air into your lungs.

The opposite happens with exhalation: Your diaphragm relaxes upward, pushing on your lungs, allowing them to deflate.

How Does the Respiratory System Clean the Air?

Your respiratory system has built-in methods to keep harmful things in the air from entering your lungs.

Hairs in your nose help filter out large particles. Tiny hairs, called cilia, along your air passages move in a sweeping motion to keep the passages clean. But if you breathe in harmful things like cigarette smoke, the cilia can stop working. This can lead to health problems like bronchitis.

Cells in your trachea and bronchial tubes make mucus that keeps air passages moist and helps keep things like dust, bacteria and viruses, and allergy-causing things out of your lungs.

Mucus can bring up things that reach deeper into your lungs. You then cough out or swallow them.

Exercise 3. Describe three phases of respiration.

Exercise 4. Match the words from the text with their definitions (a-h).

1. Respiratory	a) the act of breathing out;
2. inspiration	b) the act of forcing air in and out of the lungs of a person who cannot breathe easily on their own, using a special machine:
3. nasal	c) the act of breathing in;
4. alveolus	d) of or related to the nose;
5. lung	e) the muscle that separates the chest from the lower part of the body:
6. ventilation	f) one of the many very small air bags in the lungs, with thin walls that allow oxygen to enter the blood;
7. diaphragm	g) thin membrane covering each lung that folds_back to make a lining for the chest cavity:
8. pleura	h) two organs in the chest with which people and some animals breathe:
9. trachea	i) relating to breathing:
10. expiration	j) windpipe

Exercise 5. Complete the following sentences with the words given below and translate them:

1. A patient has difficulty in … . 2. When one breathes normally not all … opened. 3. The respiratory system consists of nose, pharynx, larynx, trachea and … .4. Each bronchus leads to a separate … . 5. When one …, the external intercostal muscles contract and lift the ribs. 6. … passes from the blood into the lungs and is breathed out. 7. The tonsils are masses of … .

(breathes *in; lung; bronchi; alveoli; breathing; lymphatic tissue; carbonic acid gas (carbon dioxide).*

Exercise 6. Are these statements true (T), false (F)? Correct the false statements.

1. The respiratory system is the organs and other parts of your body involved indigestion. **(T/F)**

2. Breathing is of vital importance for the preservation of life. **(T/F)**

3. Respiration is the process when carbon dioxide is obtained from the environment and transported to the cells. **(T/F)**

4. Larynx filters, warms and moistens air, which we inhale. **(T/F)**

5. Your body has about 6000 thousand alveoli. **(T/F)**

6. The alveoli are surrounded by the tiny blood vessels called pulmonary arteries. **(T/F)**

7. Inhalation is the process when your body gets rid of carbon dioxide. **(T/F)**

8. When you breathe in your diaphragm relaxes upward, pushing on your lungs, allowing them to deflate. **(T/F)**

9. Your respiratory system has built-in methods to keep harmful things in the air from entering your lungs. **(T/F)**

10. Cells in your nasal cavity make mucus that keeps air passages moist and helps keep things like dust, bacteria and viruses, and allergy-causing things out of your lungs. **(T/F)**

Exercise 7. Answer the following questions.

1. What does the term respiration mean?
2. What does the respiratory system consist of?
3. What is the function of the nasal cavities?

4. What does the pharynx do?
5. What contains vocal cords?
6. What makes the bronchial tree?
7. What are the smallest subdivisions of the bronchi?
8. What is the function of the pleura?
9. What is the mediastinum? Where is it located?
10. What processes does the physiology of respiration include?
11. What do lungs consist of?
12. What is the difference between inspiration (inhalation) and expiration (exhalation)?
13. Where are respiratory control centers located and what is their function?

Exercise 8. What facts can you present to your group about:

- The process of respiration
- Phases of respiration
- Structure of the respiratory system
- Inhalation and Exhalation
- How the Respiratory System Cleans the Air

Exercise 9. Read the text, translate it and.

LUNGS

The lungs are the main organs of the respiratory system. There are two lungs in the human body located in the lateral cavities of the chest. The lungs are separated from each other by the mediastinum. The lungs are covered with the pleura. They are conical in shape. Each lung has the base, apex, two borders and three surfaces.

The lung has the apex extending upward 3 – 4 centimeters (cm) above the level of the first rib.

The base of the lung is located in the convex surface of the diaphragm.

The posterior borders of the lungs are on each side of the spinal column. The anterior border is thin and overlaps the pericardium.

The weight of the lungs varies according to many conditions. In the adult male the weight of the lungs is about 1,350 gr. The right lung is about 15% heavier than the left one. The vital capacity of the lungs is 3.5 – 4 liters in the male and it is 3 – 3.5 liters in the female.

The right lung consisting of three lobes is heavier than the left one because the latter consists only of two lobes. The lower lobe of the left lung is larger than the upper one.

In infants the lungs are of a pale rosy color, but later they become darker.

The structure of the lung consists of an external serous coat, the visceral layer of the pleura, a subserous elastic tissue and the parenchyma or proper substance of the lungs.

Exercise 10. Answer the following questions.

1. What are the main organs of respiratory system and where are they located?
2. What are lungs covered with?
3. Are they oval in shape?
4. What is located in the convex surface of the diaphragm?
5. What is the weight of the lungs?
6. Do all people have the same capacity of the lungs?
7. People of all ages have the lungs of pale rosy color, do they?
8. What is the structure of the lung?

Exercise 11. Translate the following sentences.

1. Ваше серце і легені потрібно перевірити. 2. Зробіть повторну електрокардіограму. 3. Вам необхідно терміново зробити аналізи крові та сечі. 4. Підіть до терапевта і він перевірить ваше серце та легені. 5. Вашому другу потрібне стаціонарне лікування. 6.Вас будуть лікувати у пульмонологічному відділенні.

Exercise 12. Read the dialogue and dramatize it.

Doctor: I suppose you have pneumonia. I'll put you on a sick leave and prescribe you some treatment.

Patient: What must I do?

D: Listen to me attentively. Take these drugs. This mixture is for your cough. These tablets are for your headache. These drops are for the heart trouble. Take these drugs three times a day.

P: Must I stay in bed?

D: Yes, you must. Apply cups and mustard plasters every other day before going to bed. Drink hot tea with raspberry jam. Gargle your throat several times a day. You must take analyses of blood and urine. Your lungs should be X-rayed. Besides it's necessary to take an electrocardiogram.

P: Well, doctor. I'll fulfill all prescriptions.

Part II

RESPIRATORY SYSTEM DISEASES

Speaking

1. What respiratory diseases do you know?
2. Have you ever had any respiratory disease?
3. What symptoms did you have?
4. What did you do? Did you consult the doctor?

Exercise 13. Read, translate and learn the words, paying attention to the pronunciation.

English	Latin/Greek	Ukrainian
auscultation	auscultatio	Аускультація (вислуховування)
bronchoscope	bronchoscopium	бронхоскоп
mucus	mucilago	слиз
hypoxia	hypoxia	гіпоксія
pneumonia	pneumonia	пневмонія
bronchial asthma	asthma bronchialis	бронхіальна астма
allergic reaction	reaction allergica	алергічний прояв

smell	odor	запах
cough	tussis	кашель
attack	attacus	напад
spasm	spasmus	спазм
failure	dysfunctio	дисфункція
rhinitis	rhinitis	риніт, (нежить)

Exercise 14. You are a therapist and receive clinical patients. Make up a dialogue between a doctor and a patient who suffers from influenza. Use the phrases below.

To examine; don't move your shoulders; strip to the waist; take your clothes off; unbutton your outerwear; breathe deeply; breathe deeper; hold your breath; breathe in; breathe out; turn your back on me; cough, please; cover your mouth, when coughing; dress; to be painful to breathe; to be more painful to cough; to run a temperature; to cough up blood; to give up smoking; to avoid catching cold; to cause asthma attack; to listen to one's lungs.

Common diseases of the respiratory system include:

- **Asthma.** Your airways narrow and make too much mucus.
- **Bronchiectasis.** Inflammation and infection make your bronchial walls thicker.
- **Chronic obstructive pulmonary disease (COPD).** This long-term condition gets worse over time. It includes bronchitis and emphysema.
- **Pneumonia.** An infection causes inflammation in your alveoli. They might fill up with fluid or pus.
- **Tuberculosis.** A bacterium causes this dangerous infection. It usually affects your lungs but might also involve your kidney, spine, or brain.
- **Lung cancer.** Cells in your lung change and grow into a tumor. This often happens because of smoking or other chemicals you've breathed in.
- **Cystic fibrosis.** This disease is caused by a problem in your genes and gets worse over time. It causes lung infections that don't go away.

- **Pleural effusion.** Too much fluid builds up between the tissues that line your lungs and chest.
- **Idiopathic pulmonary fibrosis.** Your lung tissue becomes scarred and can't work the way it should.
- **Sarcoidosis.** Tiny clumps of inflammatory cells called granulomas form, often in your lungs and lymph nodes.

Exercise 15. Read and translate the following text:

RESPIRATORY DISORDERS

If bacteria, viruses, or fungi enter the lungs and become established there, they can cause several diseases, classifying from common illnesses such as cold and flu to more serious illnesses such as pneumonia, bronchitis, and tuberculosis.

Bronchitis. When the mucous membranes that line the main air passageways of the lungs become inflamed, the condition is called bronchitis. Virtually everyone has bronchitis at some time.

In most cases, this ailment is the result of viral infections similar to those that cause the cold. The infection spreads to the bronchi, producing the deep cough that, in turn, tends to bring up the yellowish gray sputum from the lungs. The other symptoms are soreness and feeling of constriction in the chest, breathlessness, chill, and slight fever.

Because bronchitis most commonly is the result of a viral infection, the physician probably will be able to do relatively little to hasten the recovery. Rest, drinking extra liquids, and cough medicine are the cornerstones of treatment of bronchitis. The person must avoid other irritants to the airways, such as tobacco smoke. The person must remember that the act of coughing also is irritating to the trachea and bronchi.

If a person has repeated attacks of bronchitis, he/she may be able to trace the occurrence of the conditions in which he/she lives. Cold, damp environments combined with excessive air pollution can make a person more susceptible to bronchitis.

Pneumonia. Pneumonia is an inflammation of the tissues of the lungs. There are many different kinds of pneumonia. The major subtypes are community-acquired pneumonia, hospital-acquired pneumonia, and aspiration pneumonia. The causes of

pneumonia are different. Among them are bacteria; influenza and other viruses; and chemical irritants.

The symptoms vary depending on the kind of pneumonia. Cough that produces bloody sputum, breathlessness, pain in the chest, chill, high fever are the major signs and symptoms of pneumonia.

The physician will listen to the chest to detect distortions in the breathing that suggest the presence of the infection. Chest X-rays also may be obtained to identify the location and extent of the infection. A sample of patient's sputum may be tested to identify the infecting agent. Blood test may also be conducted.

The treatment depends on the cause and severity of the patient's symptoms. It may include some antibiotics. Hospitalization may be necessary in severe cases.

Exercise 16. Translate the following words and word-combinations into English:

Озноб; мокротиння; мазок; позалікарняний; виводити; відхилення; біль, болісність; захворювання, недуга; запалюватися; наявність; слідкувати; стиснення; жар, лихоманка, підвищена температура; вологість; слизова оболонка; бронхіт; запалення легенів; задишка.

Exercise 17. Complete the following sentences:

1. Pneumonia is an inflammation of the tissues of the _____. 2. There are many different _____ of pneumonia. 3. The major subtypes of pneumonia are _____ pneumonia, hospital-acquired pneumonia, and aspiration pneumonia. 4. The physician will listen to the chest to detect _____ in the breathing that suggest the presence of the infection. 5. A _____ of patient's sputum may be tested to identify the infecting agent. 6. The treatment depends on the cause and _____ of the patient's symptoms. 7. When the mucous membranes that line the main air passageways of the lungs become _____, the condition is called bronchitis. 8. In most cases, this _____ is the result of viral infections similar to those that cause the cold. 9. The infection spreads to the bronchi, producing the deep cough that, in turn, tends to _____ up the yellowish gray sputum from the lungs. 12. The other

symptoms are soreness and feeling of constriction in the chest, breathlessness, _____, and slight fever.

Exercise 18. Combine corresponding parts into sentences, paying attention to the meaning of the sentences:

1. Acute bronchitis is usually caused by viruses or bacteria and _____. 2. Acute bronchitis is characterized by cough and sputum (phlegm) production and symptoms related to the obstruction of the airways by the inflamed airways and the phlegm, such as _____. 3. _____ will often reveal decreased intensity of breath sounds, wheeze and prolonged expiration. 4. To treat acute bronchitis, caused by a bacterial infection, or as a precaution, _____. 5. The fever, fatigue, and malaise may last only a few days, _____.

A. a physical examination; B. shortness of breath and wheezing; C. antibiotics may be given; D. may last several days or weeks; E. but the wet cough may last up to several weeks.

Exercise 19. Answer the following questions:

1. What infections of the respiratory tract do you know? 2. What is bronchitis? 3. What is the cause of bronchitis? 4. What are the signs of bronchitis? 5. What is the treatment for bronchitis? 6. What is pneumonia? 7. What subtypes of pneumonia do you know? 8. What is the cause of pneumonia? 9. What are the symptoms of pneumonia? 10. What tests may help to determine pneumonia? 11. What does the treatment of pneumonia include?

Exercise 20. Insert the prepositions:

A respiratory infection such as that caused _ the influenza virus or bacterium may cause bronchioles (small airways in the lungs) to become inflamed and to secrete an excessive amount _ mucus. Bronchiolitis is common, especially during the winter, _ children younger 2 years, but it can occur in young adults under special circumstances. It usually is caused by a viral infection, often contracted _ someone in the infant's household. In infants or families with a history _allergies or _ infants with recurring bronchiolitis, and allergic reaction may be the cause of the respiratory disorders. Ex. 16. Write out key words of the text "Respiratory Disorders".

Exercise 21. Read and translate

Diagnosis and treatments for respiratory and lung disorders

Treatments for lung and breathing disorders will depend on the severity and sometimes root cause of the disease. Our team of specialists will work closely with you to develop an individualized treatment plan.

Asthma: The most common treatment for asthma is rescue and controller inhalers, but other treatments and medications can be used. Doctors also recommend patients identify and reduce asthma triggers. Common triggers include allergies, viruses, exercise, cold weather and fumes. Patients are also often taught skills to monitor and manage their asthma.

Chronic Cough: Some of the tests that may be used to diagnose the cause of a chronic cough may include a chest X-ray and other radiology tests, breathing tests, pH monitoring, swallow tests and upper GI endoscopy if reflux is associated with the cough. The treatment of chronic cough is usually directed at its cause. Our specialists can help determine your best options for treatment.

Chronic Obstructive Pulmonary Disease (COPD): The most common cause of COPD is smoking, although breathing in pollutants, dust or chemicals can also be the cause. For smokers, smoking cessation can help prevent the disease or keep it from getting worse. COPD can also be treated with inhalers, medications, oxygen therapy and pulmonary rehab. In severe cases, surgery may be an option.

Lung Cancer: Lung cancer is diagnosed with a tissue sample or biopsy to determine the kind of cancer. The diagnosis is most commonly made by bronchoscopy or needle biopsy. Treatment of lung cancer depends on the type of cancer, the stage, the location and whether the cancer has spread. Treatment may include surgery, chemotherapy and/or radiation.

Lung Nodules: Lung nodules are often found when tests are being done for another reason. Diagnostic tests include:

- Bronchoscopy
- Electromagnetic navigation bronchoscopy
- PET scan/CT scan

- Needle biopsy through the chest wall
- Surgical lung biopsy

Pulmonary Hypertension: A series of tests may be needed to diagnosis pulmonary hypertension such as:

- Pulmonary function tests
- Chest X-rays, lung perfusion scans and other film studies
- Six-minute walk test
- Blood tests
- ECG (EKG)
- Echocardiogram

There is no cure but there are treatment options to try to reduce the symptoms, slow the progression and improve quality of life. If pulmonary hypertension is the side effect of another illness, treatment focuses on the primary cause. If pulmonary hypertension is the primary cause, medications can be used.

Shortness of Breath: Diagnostic tests may include pulmonary function tests, chest X-ray, EKG, echocardiogram, bronchoscopy, blood tests or chest CT scan. Treatment for shortness of breath depends on the underlying cause and severity.

Pulmonary Rehabilitation: Pulmonary rehab is for people with chronic breathing conditions that limit quality of life. Gundersen exercise physiologists and respiratory therapists help you set goals, establish a safe exercise routine and learn how to exercise at home. To learn if you are a good candidate for pulmonary rehab, talk with your primary care provider. You'll need a referral to participate. While most health insurance covers pulmonary rehab, you should also check with your health insurance carrier before you begin.

Tobacco Cessation: Smoking is a leading cause of preventable respiratory and lung disease. Quitting smoking is the most important thing you can do to live a longer, healthier life.

Exercise 22. Are these statements true (T), false (F)? Correct the false statements.

1. Asthma is a chronic heart condition. **(T) / (F)**

2. Bronchitis is a respiratory infection that causes a hacking cough and produces phlegm. **(T) / (F)**

3. Inhalation and inhaler are noun forms. **(T) / (F)**

4. Some individuals with pneumonia will experience a cold, a fever, shaking chills, and cough with sputum production. **(T) / (F)**

5. The adjective form of perspiring is perspiration. **(T) / (F)**

6. Tuberculosis cannot be treated successfully with antibiotics. **(T) / (F)**

7. The most common cause of emphysema is cigarette smoking. **(T) / (F)**

8. People with chronic obstructive pulmonary disease (COPD) experience wheezing and shortness of breath. **(T) / (F)**

9. Pneumothorax refers to a collapsed lung. **(T) / (F)**

10. The adjective form of asthma is asthmatic. **(T) / (F)**

11. A person with bronchitis may experience fatigue, shortness of breath, and itchiness. **(T) / (F)**

12. The most common forms of COPD are asthma and tuberculosis. **(T) / (F)**

13. Pleurisy is a blood clot in the lung, and a pulmonary embolism is fluid in the lung. **(T) / (F)**

14. Allergens such as pet dander, dust mites, molds, and pollen can trigger asthma. **(T) / (F)**

15. The word wheeze is a noun and an adjective. **(T) / (F)**

Exercise 23. Read the following text, write out key words of it, and retell the text:

COUGH

A cough is a normal protective reflex, designed to defend the respiratory system against irritants. However, a forceful cough can be painful and bothersome. Some of these coughs need the physician’s attention. Others respond to simple self-care and the right medicine.

What causes a cough? Here are some typical irritations that cause coughing:

Infections, such as cold and flu;

Environmental irritants, such as cigarette smoke, smog, dust, home aerosol sprays, and cold and dry air;

Asthma, which inflames and constricts the air passages;

Gastroesophageal reflux – the backup of stomach acid into the esophagus when a person lies down;

Medications, such as inhaled corticosteroids or certain medications prescribed for high blood pressure and heart disease.

Coughing itself. Sometimes there is no medical explanation for a cough. Some people cough to release nervous tension, gain attention, or express anger. Whatever the reason, one cough can irritate the person's throat and lead to another, setting up a vicious cycle.

A cough begins when an irritant reaches one of the cough receptors in the nose, throat, or chest. The receptor sends a message to the cough center in the brain, signaling the body to cough. After a person inhales, the epiglottis and vocal cords close tightly, trapping air within the lungs. The abdominal and chest muscles contract forcefully, pushing against the diaphragm. Finally, the vocal cords and epiglottis open suddenly, allowing trapped air to explode outward.

Exercise 24. Choose the correct answer from a, b, and c.

1. _____ "She was shouting at the top of her lungs" means:

a. *she was speaking very loudly*

b*. the top of her lungs is in a lot of pain*

c. *her lungs had collapsed*

2. _____ "To get something off your chest" means:

a. *to remove the heavy pressure on your chest*

b*. to let someone know that something has been annoying or bothering you for a long time*

c. *to be very angry and anxious*

3. _____ Another word for pertussis is:

a. hacking cough b. persistent cough c. whooping cough

4. _____ If someone is experiencing shallow breathing, they are:

a. *breathing heavily*

b. *wheezing*

c*. breathing in small amounts of air*

5. _____ If a patient complains of shortness of breath, wheezing, and fatigue, he or she might have:

a*. pleurisy* ***b****. bronchitis* ***c.*** *tuberculosis*

6. _____ Emphysema is a common problem in:

a. children with cystic fibrosis

b. asthmatics

c. smokers

7. _____ Dyspnea is another word for:

a. wheezing

b. shortness of breath

c. puffs

8. _____ The word tightness is:

a. a noun

b. a verb

c. an adjective

9. _____ A hacking cough is:

a. a loud, repeated, painful cough

b. a dry cough

c. a cough that produces a lot of phlegm

10. _____ The patient complained that she was having shaking chills, a high fever, some chest pain, and that she was coughing with sputum. This could indicate she has:

a. a collapsed lung

b. pneumonia

c. bronchitis

Exercise 25. Now that you have read sentences describing language regarding the chest, lung, and respiratory system, assess your understanding by doing the exercises below.

Choose the answer that correctly completes each sentence below.

1. _____ A bronchodilator:

a) treats croup

b) is prescribed for chronic bronchitis

c) supplies supplemental oxygen

2. _____ Patients with pneumonia may:

a) feel a sharp pain in the chest when they take deep breaths

b) feel a mild pain when they take shallow breaths

c) have labored breathing

3. _____ Thick, sticky mucous secretions caused by the flu or a cold can be reduced by:

a) wheezing

b) taking an expectorant

c) chest percussions

4. _____ A collapsed lung can be caused by:

a*) a stabbing and gunshot wounds only*

b) lung diseases only

c) lung diseases and physical injury such as a broken rib cage, a stabbing, or a gunshot wound

5. _____ Dyspnea refers to:

a*) labored breathing*

b) shortness of breath

c) exhalation

6. _____ An early sign of COPD includes:

a) emphysema

b) shortness of breath with exertion

c) shortness of breath without exertion

7. _____ A chronic infection:

a) is sudden and lasts a short time

b) recurs often

c) is sudden and lasts a long time

8. _____ Pertussis is:

a) an infection of the respiratory system

b) an inflammation of the bronchial tubes

c) another word for wheezing

9. _____ Bronchial tubes refer to:

a) nasal passages

b) air passages

c) the windpipe

10. _____ An example of chronic obstructive pulmonary disease is:

a) walking pneumonia

b) asthma

c) emphysema

11. _____ Pertussis is another term for:

a) hacking cough

b) wheezing

c) whooping cough

12. _____ Children with croup:

a) are having an asthma attack

b) produce a loud, barking sound

c) have suffered a collapsed lung

13. _____ Expectorate means to:

a) swallow

b) take a deep breath

c) spit up

14. _____ Asthma can cause the bronchial tubes to:

a) become clogged

b) get inflamed and irritated

c) collapse

15. _____ A treatment for emphysema is:

a) moist air

b) smoking cessation

c) lack of oxygen

Exercise 26. Indicate whether each sentence below is true (T) or false (F).

1. Chest percussion is a treatment for asthma. **(T) / (F)**

2. A person who has tuberculosis will wheeze. **(T) / (F)**

3. Irritants and pollutants can cause chronic bronchitis. **(T) / (F)**

4. Pneumonia is an infection and inflammation of the lung caused by cigarette smoke. **(T) / (F)**

5. If a child is suffering from croup, the vocal chords are affected, and the child's voice will be hoarse and produce a loud, barking sound. **(T) / (F)**

6. Bacteria, viruses, and fungi cause asthma. **(T) / (F)**

7. The word "asthmatic" is both a noun and an adjective. **(T) / (F)**

8. Whooping cough is not a contagious disease. **(T) / (F)**

9. Symptoms of COPD include a persistent cold, nausea, and shallow breathing. **(T) / (F)**

10. The word "exhausted" is both an adjective and a noun. **(T) / (F)**

Exercise 27. An important part of communication is the ability to write about what you read, to write correctly, and to spell correctly. In the exercises below, write your understanding of the meaning of the bolded words.

1. Describe in writing what **asthma, emphysema**, and **chronic bronchitis** are.

_____

_____

_____

_____

2. Describe in writing what **croup** and **whooping cough** are.

_____

_____

_____

_____

_____

3. Describe in writing what **cystic fibrosis**, t**uberculosis**, and **pneumonia** are.

_____

_____

_____

_____

_____

_____

_____

4.3 DIGESTIVE SYSTEM

Speaking

1. What are the main parts of the digestive system?
2. What are possible problems that can occur in the digestive system?
3. How can we prevent digestive system disorders?

Active Vocabulary

1.	Stomach	шлунок
2.	gallbladder	жовчний міхур
3.	digestive	травний
4.	chew	жувати; пережовувати
5.	pharynx	глотка
6.	accessory	допоміжний, додатковий
7.	mucous	слизовий
8.	reduce	зменшувати

9.	release	виділяти
10.	enzyme	фермент
11.	colon	ободова кишка
12.	indigestive	неперетравлений
13.	vermiform	червоподібний
14.	ingest	поглинати, проковтнути
15.	pancreas	підшлункова
16.	propel	проштовхувати
17.	saliva	слина
18.	esophagus	стравохід
19.	dilate	розширювати
20.	semi-liquid	напіврідкий
21.	duodenum	дванадцятипала кишка
22.	jejunum	порожня кишка
23.	ileum	клубова кишка
24.	caecum (cecum)	сліпа кишка
25.	rectum	пряма кишка
26.	feces	кал, фекалії, екскременти
27.	appendix	відросток
28.	masticate	жувати
29.	undigested	неперетравлений
30.	intestines	кишківник
31.	palate	піднебіння
32.	to attach	прикріплювати

Exercise 1. Read and translate the following words and word-combinations:

The oral cavity; small and large intestines; muscular contractions; the alimentary tract; the soft and hard palates; salivary glands; esophagus; the upper abdomen; a semi-liquid mixture; to release acid and enzymes; a thin-walled tube; the abdominal and pelvic cavities; the major site of absorption; the attached vermiform appendix.

Exercise 2. Match the words from the text with their definitions (a-h).

1. stomach	a) a small tube-shaped part that is joined to the intestines on the right side of the body and has no use in humans
2. liver	b) an organ in the body that produces insulin (a chemical substance that controls the amount of sugar in the blood) and substances that help to digest food
3. pancreas	c) the tube-like passage from the mouth, through the stomach and to the anus, through which food travels during digestion
4. gallbladder	d) any substance that people, plants or animals need in order to live and grow
5. digestive tract	e) glands that produce saliva and release it into the mouth
6. tongue	f) an organ like a bag inside the body of a person or animal, where urine is stored before it leaves the body
7. salivary glands	g) a large organ in the body that cleans the blood and produces bile
8. abdominal	h) the large, soft piece of flesh in the mouth that you can move, and is used for tasting, speaking, etc.

9. appendix	i) an organ in the body where food is digested, or the soft front part of your body just below the chest
10. nutrients	j) in, forming, or relating to the abdomen

Exercise 3. Complete the following sentences using words from exercise 2.

1. She had her _____out (medically removed) last summer.
2. This exercise works your _____muscles.
3. The tip of the _____is sensitive to salt and sweet stimuli and the back of the _____ is sensitive to bitter stimuli.
4. She has a very delicate _____and doesn't eat spicy food.
5. A healthy diet should provide all your essential _____.
6. The food we eat is propelled through the _____by muscular contractions.
7. _____ is responsible for the amount of sugar in the blood.
8. Symptoms of the disease include an enlarged spleen or _____.

Exercise 4. Read the following text:

DIGESTIVE SYSTEM

The digestive system consists of many parts. They are the oral cavity, esophagus, stomach, small and large intestines, the liver, the pancreas, gallbladder and others.

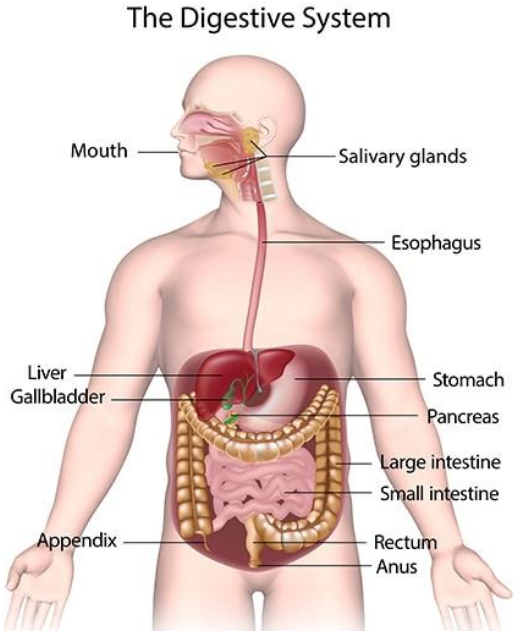
The food we eat is propelled through the digestive tract by muscular contractions. The digestive tract is also called the alimentary tract or alimentary canal. The term gastrointestinal tract technically only refers to the stomach and intestines but is often used as a synonym of the digestive tract.

The first division of the digestive tract is the mouth, or oral cavity. Important structures of the oral cavity are the teeth, the tongue, the soft and hard palates, and salivary glands. Digestion begins when the person chews the food. The food is broken into smaller pieces by the teeth and is mixed with saliva secreted by the salivary glands.

From the mouth food passes through the pharynx to the esophagus. The major accessory structures of the pharynx and the esophagus are mucous glands.

The esophagus opens into the stomach. It rests in the upper abdomen. It is a dilated portion of the digestive tract. The stomach receives food from esophagus, and its mixing action reduces the food to a semi-liquid mixture. The stomach walls contain many glands from which acid and enzymes are released into the stomach and mixed with ingested food.

The stomach opens into the small intestine. The small intestine is a thin-walled tube approximately 6.5 meters long. It is located in the lower and central portions of the abdominal and pelvic cavities. It is composed of the duodenum, jejunum, and ileum. The first segment of the small intestine is the duodenum. The major accessory structures in this segment of the digestive tract are the liver, the gallbladder, and the pancreas. The next segment of the small intestine is the jejunum. Small glands exist along its length, and it is the major site of absorption. The last segment of the small intestine is the ileum, which is similar to the jejunum except that fewer digestive enzymes and more mucus are secreted and less absorption occurs in the ileum.



The last section of the digestive tract is the large intestine. It is divided into cecum, colon, and rectum. Its major accessory glands secrete mucus. It absorbs water and salts and concentrates indigested food into feces. The first segment is the cecum, with the

attached vermiform appendix. The cecum is followed by colon and rectum. The rectum joints the anal canal, which ends at the anus.

The functions of the digestive system are to ingest food, masticate the food, propel the food through the digestive tract, add secretions to the food and digest the food; and absorb water, electrolytes, and other nutrients from the digested food. Once these useful substances are absorbed, they are transported through the circulatory system to cells where they are used. Undigested matter is moved out of the digestive tract and excreted through the anus. The processes of propulsion, secretion, and absorption are regulated by nervous and hormonal mechanisms.

Exercise 4. Translate the following words and word-combinations into English:

Глотка; стравохід; шлунок; підшлункова залоза; товстий кишечник; жовчний міхур; сліпа кишка; пряма кишка; товста кишка; порожня кишка; клубова кишка; дванадцятипала кишка; зуби; язик; тверде піднебіння; слинні залози; знаходитися у нижній частині черевної порожнини; напіврідка суміш; тонкостінна трубка; проходити уздовж; переноситись по кровоносній системі.

Exercise 5. Are these statements true (T), false (F)? Correct the false statements.

1. The food we eat is propelled through the digestive tract by process of exhalation. **(T) / (F)**
2. The last segment of the small intestine is the duodenum. **(T) / (F)**
3. The stomach opens into the large intestine. **(T) / (F)**
4. The first section of the digestive tract is the large intestine **(T) / (F)**
5. The small intestine is a thin-walled tube approximately 1 meter long. **(T)/(F)**
6. Small glands exist along the length of the jejunum, and it is the major site of absorption. **(T) / (F)**
7. The only function of the digestive system is to ingest food. **(T) / (F)**
8. Undigested matter isn’t moved out of the digestive tract. **(T) / (F)**
9. The appendix is followed by colon and rectum. **(T) / (F)**
10. Small intestine is divided into cecum, colon, and rectum. **(T) / (F)**
11. The pancreas is a short thin gland lying under and behind the stomach. **(T) / (F)**

Exercise 6. Answer the following questions:

1. What does the digestive system consist of?
2. What is the food propelled through the digestive tract by?
3. What is the first division of the digestive tract?
4. What are there in the oral cavity?
5. Where does the food pass from the mouth?
6. What is the esophagus?
7. What is the function of the stomach?
8. What parts is the small intestine composed of?
9. What are the major accessory structures in the first segment of the small intestine?
10. What is the functional difference between ileum and jejunum?
11. What portions is large intestine divided into?
12. What are the major functions of the digestive system?

Exercise 7. Read the following text and compose 3-4 short dialogues:

PORTIONS OF THE DIGESTIVE SYSTEM

PHARYNX

The pharynx consists of three parts: the nasopharynx, the oropharynx, and laryngopharynx. Normally, only the oropharynx and laryngopharynx transmit food. The oropharynx communicates with the nasopharynx superiorly, the larynx and laryngopharynx inferiorly, and mouth anteriorly. The laryngopharynx extends from the oropharynx to the esophagus and is posterior to the larynx. The posterior walls of the oropharynx and laryngopharynx consist of three muscles, the superior, middle, and inferior pharyngeal constrictions, which are arranged like three stacked flower pots, one inside the other. The oropharynx and the laryngopharynx are lined with moist, stratified squamous epithelium, and the nasopharynx is lined with ciliated pseudostratified epithelium.

ESOPHAGUS

The esophagus is that portion of the digestive tube that extends between the pharynx and the stomach. It is approximately 20-25 cm long and lies in the mediastinum. The esophagus transports food from the pharynx to the stomach. It has thick walls consisting of the four tunics common to the digestive tract: mucosa, submucosa, muscularis, and adventitia.

SMALL INTESTINE

The small intestine consists of three portions: the duodenum, the jejunum, and the ileum. The entire small intestine is approximately 6.5 m long; the duodenum is approximately 25 cm long (the term duodenum means 12, suggesting that is 12 inches long); the jejunum, constituting approximately two fifths of the total length of the small intestine, is approximately 2.5 m long, and the ileum, constituting three fifths of the small intestine, is approximately 3.5 m long. Two major glands, the liver and pancreas, are associated with the duodenum.

GALLBLADDER

The gallbladder is a saclike structure on the inferior surface of the liver that is approximately 8 cm long and 4 cm wide. Three layers form the gallbladder wall: an inner mucosa folded into rugae that allow the gallbladder to expand; a muscularis of smooth muscle that allows the gallbladder to contract; and outer covering of connective tissue. The gallbladder is connected to the common bile duct by the cystic duct.

PANCREAS

The pancreas is a complex organ composed of both endocrine and exocrine tissues that perform several functions. The pancreas consists of a head, a body, and a tail, which extends to the spleen. The endocrine portion of the pancreas consists of pancreatic islets (islets of Langerhans). The islet cells produce insulin and glucagons, which are very important in controlling blood levels of nutrients such as glucose and amino acids, and somatostatin, which regulates insulin secretion. The exocrine portion of the pancreas consists of acini (grapes), which produce digestive enzymes. The acini connect to a duct system that forms the pancreatic duct, which empties into the duodenum.

LARGE INTESTINE

The large intestine consists of the cecum, colon, rectum, and anal canal. The cecum is the proximal end of the large intestine and is the portion where the large and small intestines meet. The colon consists of four portions. The mucosal lining of the large intestine consists of simple columnar epithelium. It has numerous straight tubular glands. The rectum is a straight, muscular tube. It begins at the termination of the sigmoid colon and ends at the anal canal. The last 2 to 3 cm of the digestive tract is the anal canal. It begins at the inferior end of the rectum and ends at the anus. The smooth muscle layer of the anal canal forms the internal anal sphincter and external anal sphincter.

Exercise 8. Retell the text "Portions of the digestive system". The following expressions may be helpful:

… is a part of the digestive system. It consists of … . … is located .. . Its function is to … .

Exercise 9. Insert the missing words given below:

THE ALIMENTARY TRACT

The alimentary tract is a musculomembraneous canal about 8.5 meters in length. It 1)_____ from the oral cavity to the anus. It consists of the mouth, pharynx, 2)_____, stomach, small intestine, and large intestine. The liver with gallbladder and 3)_____ are the large glands of the alimentary tract.

The first division of the alimentary tract is formed by the mouth. Important structures of the mouth are the 4)_____ and the tongue, which is the organ of taste. The soft and hard 5)_____ and the salivary glands are also in the oral cavity.

From the mouth food passes through the 6)_____ to the esophagus and then to the stomach.

The stomach is a dilated portion of the alimentary canal. It is in the upper part of the abdomen under the diaphragm. It measures about 21-25 cm in length.

The small intestine is a thin-walled muscular tube about 6.5 meters long. It is located in the lower and central parts of the 7)_____ and pelvic cavities. The small intestine is composed of the duodenum, jejunum, and ileum.

The large intestine is about 1.5 meters long. It is divided into caecum, 8)_____, and rectum.

The liver is the largest 9)_____ in the human body. It is in the right upper part of the abdominal cavity under the diaphragm. The gallbladder is a hollow 10)_____ lying on the lower surface of the liver.

The pancreas is a long thin gland lying under and behind the stomach.

palates; esophagus; gland; pharynx; teeth; colon; pancreas; extends; abdominal; sac.

Exercise 10. Answer the following questions:

What organ or the part of the digestive tract is located:

1) in the lower and central portions of the abdominal and pelvic cavities?

2) in the right upper part of the abdominal cavity under the diaphragm?

3) in the abdominal cavity under and behind the stomach?

4) within the abdominal cavity on the lower surface of the liver?

Exercise 11. Speak on the structure and functions of the digestive system. The following expressions may be helpful:

Digestive system consists of … .

Important structures of … are … .

The first /second /last segment of alimentary canal is … .

Food passes through … to … .

Small / Large intestine is divided into /includes /consists of … .

The main function of … is to … .

Exercise 12. Read and reproduce the following dialogue:

At the Gastroenterologist's

Gastroenterologist: What do you complain of?

Patient: I often have a severe pain in my abdomen.

G.: In what part of abdomen do you feel the pain?

P.: In the upper part. Here it is.

G.: What is the character of the pain? Is your pain acute or dull?

P.: It is dull. But sometimes I have colics in my stomach.

G.: Is your pain constant or periodic?

P.: I feel it just after meals.

G.: Do you take any medicines when you feel the pain?

P.: Yes, I do. I take some medicines and my pain disappears.

G.: When did the abdominal pain appear? Where does the pain radiate to?

P.: The pain appeared some months ago. It often radiates to the back.

G.: Do you have a feeling of heaviness?

P.: Yes, I do.

G.: What else troubles you?

P.: Sometimes I have nausea or vomiting.

G.: Do you obtain relief after vomiting?

P.: Yes, I do.

G.: Now undress, please. I'll examine you. Show me your tongue, please. Your tongue is thickly coated. Lie down on the couch. I'll palpate your abdomen. The abdomen is symmetrically enlarged. Show me where the pain is. Is it painful when I press here?

P.: Yes, it is.

G.: That's all. Dress yourself and sit down here. Listen to me attentively. First you have to make roentgenography of your abdomen and your gastric juice analysis. Then come to me and I'll prescribe you the treatment. Keep to a diet. Don't eat sour and salt meals. Avoid the physical exertion and emotional overstrain.

P.: Thank you. I'll fulfill all your administrations.

Part B. GASTROINTESTINAL DISEASES. DRUG THERAPY OPTIONS

Speaking

1. What organs may be damaged by gastrointestinal diseases?
2. What gastrointestinal diseases do you know?
3. Have you ever suffered from gastrointestinal disorders?

Active Vocabulary

1. gastrointestinal tract (GI)	шлунково-кишкового тракту (ШКТ)
2. gastritis	гастрит
3. peptic ulcer	виразкова хвороба
4. stomach cancer	рак шлунку
5. ulcerative colitis	виразковий коліт
6. excessive	надмірний
7. anti-inflammatory	протизапальний
8. insufficiency	неефективність
9. gastroenterologist	гастроентеролог
10. nausea	нудота
11. bloating	вздуття живота
12. heartburn	печія
13. weight loss	втрата ваги
14. release	виділення, (звільнення)
15. constipation	закреп
16. fatigue	втома
17. cramps	судоми
18. bleeding	кровотеча
19. flare-ups	спалахи (загострення)
20. viral hepatitis	вірусний гепатит

Exercise 13. Translate into Ukrainian:

The digestive tract disorders; to range from mild to serious; excessive alcohol use; to contribute significantly; to deal with the diagnosis and treatment; irritation or erosion of the lining of the stomach; to form cancer cells; painful sores; symptoms of gastric dysfunction; to neutralize gastric juice; to be broken down into small particles; potent therapy; to require prescription medicines; to restrict consumption of something.

Exercise 14. Read the text.

GASTROINTESTINAL DISEASES AND DRUG THERAPY OPTIONS

A digestive disease is any disorder that occurs in the digestive tract, which is sometimes called the gastrointestinal (GI) tract. The digestive tract is made up of the mouth, throat, esophagus, stomach, small and large intestines, liver, pancreas, and the gallbladder. In digestion, food and drink are broken down into small particles (nutrients) that the body can absorb and use for energy, growth and cell repair.

Digestive diseases may range from mild to serious. Some common problems include gastritis, peptic ulcer, stomach cancer, ulcerative colitis. Excessive alcohol use, stress, aspirin and other anti-inflammatory medications, infections, and vitamin insufficiency may contribute significantly to their development. A gastroenterologist is a physician who deals with the diagnosis and treatment of the digestive disorders.

Gastritis is an inflammation, irritation or erosion of the lining of the stomach. **Peptic ulcer** disease refers to painful sores in the gastric mucosa or duodenum. **Stomach cancer** occurs when cancer cells form in the mucous membrane of the stomach. The common symptoms of gastric dysfunction may include nausea, vomiting, abdominal pain, bloating, indigestion, heartburn, loss of appetite, weight loss, and black and tarry stools. To relieve and remove gastric discomfort it is generally recommended to advise of taking ***antacids*** to neutralize gastric juice, ***proton pump inhibitors*** or ***H-2 blockers*** to reduce the release of stomach acid, ***antibiotics*** to kill bacteria, ***vitamin*** shots to replenish ***B-12*** in the body. Stomach cancer is treated by surgery, ***chemotherapy*** and ***radiation***. Some side effects can be observed after this potent therapy, such as pain, fatigue, mouth, gum and throat sores, nausea and vomiting, constipation or diarrhea, skin irritation, weight changes, hair loss, kidney and bladder problems, anemia, impairment of blood clotting process, increased risk of infection.

Ulcerative colitis is inflammatory bowel disease. It affects the lining of the large intestine and results in the appearance of painful and bleeding sores or ulcers. The main symptoms are abdominal pain, cramps, diarrhea, bleeding from the rectum, joint pain, and eye problems. If the symptoms are mild, the patient may need only over-the-counter medication for diarrhea. Many people require prescription medicines, such as

aminosalicylates and ***steroids*** to reduce the body's immune response, to stop symptoms and prevent flare-ups.

The incidence of gastrointestinal diseases such as cholera, typhoid, dysentery, viral hepatitis (A and E virus) can be substantially reduced by providing clean water and food to the population. Restricting consumption of tobacco and nonsteroidal anti-inflammatory drugs, diminishing alcohol intake and improving blood banks would prevent many acute and chronic liver diseases.

Exercise 15. Put the sentences in the order they appear in the text.

1.	Stomach cancer is treated by surgery, chemotherapy and radiation.	
2.	If the symptoms are mild, the patient may need only over-the-counter medication for diarrhea.	
3.	Peptic ulcer disease refers to painful sores in the gastric mucosa or duodenum.	
4.	Restricting consumption of tobacco and nonsteroidal anti-inflammatory drugs, diminishing alcohol intake and improving blood banks would prevent many acute and chronic liver diseases.	
5.	To relieve and remove gastric discomfort it is generally recommended to advise of taking antacids.	
6.	In digestion, food and drink are broken down into small particles (nutrients) that the body can absorb and use for energy, growth and cell repair.	

7.	A gastroenterologist is a physician who deals with the diagnosis and treatment of the digestive disorders.	
8.	A digestive disease is any disorder that occurs in the digestive tract, which is sometimes called the gastrointestinal (GI) tract.	
9.	Some common problems include gastritis, peptic ulcer, stomach cancer, ulcerative colitis.	
10.	Digestive diseases may range from mild to serious.	

Exercise 16. Match the words from the text with their definitions (a-j).

1.	nutrient	a) a destruction or wearing away of a surface by friction, pressure, ulceration or trauma
2.	aspirin	b) said of feces that are black and glutinous
3.	insufficiency	c) abnormally decreased function of the organ
4.	erosion	d) a biochemical substance used by the body that must be supplied in adequate amounts from foods consumed
5.	sore	e) any agent that neutralizes acidity, as of the gastric juice or any other secretion
6.	tarry	f) a medicine that relieves pain and reduces fever

7. antacid	g) any type of painful lesion or ulcer of the skin or mucous membrane
8. chemotherapy	h) a group of drugs that includes the corticosteroids, similar to hormones produced by the adrenal glands, and used to relieve inflammation and itching
9. over-the-counter	i) a medication that may be bought without a physician's prescription
10. steroids	j) drug therapy option to kill cancer cells

Exercise 17. Complete the sentences with the words and phrases in the box.

digestive diseases cell repair stomach cancer ulcerative colitis proton pump inhibitors antibiotics vitamin shots____prescription medicines aminosalicylates nonsteroidal anti-inflammatory drugs

1. Pharmacy mustn't sell steroids to its customer without a physician's prescription as they are _____.

2. _____ are a group of effective and generally safe medicines prescribed to treat heartburn and heal gastric ulcers by reducing the amount of acid produced by the patient's stomach.

3. More and more doctors recommend their patients _____ because of their better absorption.

4. There are common symptoms associated with _____: nausea and vomiting, abdominal pain, bloating, indigestion, heartburn, loss of appetite, weight loss.

5. _____ are effective in our struggle against Helicobacter Pylori.

6. Prophylaxis and early diagnosis lower the risk of contracting _____.

7. If the doctor establishes bleeding sores and redness of the surface of the colon, he will carry out additional investigations to confirm _____.

8. Intensive stem cell research will enable the scientists to succeed in _____ and replacement.

9. Gastritis may be followed by peptic ulcer unless the patient stops taking _____ that cause irritation of the stomach lining.

10. After the patient had been diagnosed with the inflammatory bowel disease the gastroenterologist wrote out a prescription for _____ to treat and prevent flare-ups.

Exercise 18. Are these statements true (T), false (F)? Write true sentences.

1. A digestive disease is any disorder that occurs in the urinary tract. **(T/F)**

2. Digestive diseases always cause severe symptoms. **(T/F)**

3. Gastritis is an inflammation, irritation or erosion of the lining of the stomach. **(T/F)**

4. Peptic ulcer disease is established when there are bleeding sores in the mucosa of the colon. **(T/F)**

5. Black and tarry stools may indicate gastric bleeding. **(T/F)**

6. Antacids neutralize gastric juice but proton pump inhibitors or H-2 blockers reduce its secretion. **(T/F)**

7. Vitamins given in injections are not easily absorbed. **(T/F)**

8. Chemotherapy includes highly potent drugs that kill cancerous cells. **(T/F)**

9. If the symptoms of ulcerative colitis are serious, the patient may need only over-the-counter medications for diarrhea. **(T/F)**

10. The incidence of gastrointestinal diseases can be substantially reduced by providing clean water and food to the population, restricting consumption of tobacco and nonsteroidal anti-inflammatory drugs, diminishing alcohol intake and improving blood banks. **(T/F)**

Exercise 19. Read the text again. Answer these questions.

1. What organs of the digestive tract can be damaged by gastrointestinal diseases?

2. Why do people need nutrients?

3. What lifestyle and medical factors may contribute significantly to the development of gastrointestinal diseases?

4. What does a gastroenterologist deal with?

5. When is gastritis (peptic ulcer, stomach cancer) diagnosed?

6. What are the most frequent complaints of the patients suffering from gastric dysfunction?

7. What classes of medications can improve the symptoms of gastric problems and promote recovery?

8. What side effects can chemotherapy and radiation provoke?

9. What prescription medicines are recommended to treat ulcerative colitis? What action do they produce?

10. What measures can reduce the incidence of gastrointestinal diseases globally?

Exercise 20. A) Complete the text with the given below words.

B) Read and translate the text.

STOMACH

The stomach stores and 1) _____ the ingested food. The major function of the stomach is to prepare the food chemically and 2) _____ so it can be received in the small intestine for further digestion and absorption into the 3) _____.

The stomach is an 4) _____ segment of the digestive tract. It is located in the left superior portion of the abdomen. Its shape and 5) _____ vary from person to person. The region of the stomach around the cardiac opening is the cardiac region. The stomach 6) _____ the fundus (upper part), the body (middle part), and the antrum (lower distal part).

The largest 7) _____ of the stomach is the body, which turns to the right. The walls of the stomach consist of various 8) _____ of powerful muscles. The mechanical activity of these muscles breaks the food into smaller and smaller pieces. The glands of the stomach 9) _____ gastric juice. This juice contains pepsins (digestive enzymes) and hydrochloric acid. Pepsin converts 10) _____ into smaller substances. Hydrochloric acid is necessary for the correct action of pepsin. Food leaves

the stomach in two11) _____. The 12) _____ portion of the stomach contracts first, pushing the more liquid material into 13)_____ intestine. The more solid food leaves later, primarily by the action of the 14) _____ in the lower part of the stomach. The partially processed food then travels through the pyloric canal into the first portion of small intestine, the 15) _____.

(size; muscles; proteins; blood; phases enlarged; duodenum; secrete; upper; portion; small; consists of; layers; mechanically; mixes)

C) Answer the following questions:

1. What is the stomach?
2. What is the major function of the stomach?
3. Where is the stomach located?
4. What does the stomach consist of?
5. What is the largest portion of the stomach?
6. What do the walls of the stomach consist of?
7. What secretes the gastric juice?
8. What substances does the gastric juice contain?
9. What substances are absorbed in the stomach?

D) Translate into English:

1. Шлунок – найбільш розширений відділ травного каналу. 2. Він розташований між стравоходом і дванадцятипалою кишкою, у верхньому відділі черевної порожнини. 3. Форма та розміри шлунка коливаються у різних людей. 4. Це залежить від його функціонального стану, від віку та статі. 5. По краях шлунка одна його стінка переходить в іншу, утворюючи малу кривизну шлунка. 6. Стінки шлунка складаються з трьох оболонок: серозної, м'язової та слизової.

Exercise 21. What facts can you present to your group about:

Structure of the digestive tract, gastritis, peptic ulcer, stomach cancer, common gastric symptoms; drug therapy options.

UNIT V.

DRUGS AND THEIR ADMINISTRATION.

5.1 CLASSIFICATION OF DRUGS

Speaking

1. What types of drugs do you know?
2. Do you often take drugs?
3. Do you prefer natural drugs to synthesized in the laboratory?
4. What field of medicine studies drugs?

Active Vocabulary

1. to obtain	отримувати
2. to purify	очищати
3. hormone	гормон
4. gland	залоза
5. synthesize	синтезувати
6. anticancer	протиракові
7. achievement	досягнення
8. replacement therapy	замісна терапія
9. thyrodism	щитовидна залоза
10. diabetes mellitus	цукровий діабет
11. adrenal cortex	кора надниркових залоз
12. anterior pituitary	передня доля гіпофізу
13. plant origin	рослинного походження
14. Digitalis	наперстянка

15. satisfactory substitutes	задовільні замінники
16. ultimate	кінцевий
17. alleviation	полегшення
18. active ingredient	діюча речовина
19. neuropharmacological	нейрофармакологічні
20. cardiovascular	серцевосудинні
21. gastrointestinal	шлунково-кишковий
22. antimicrobials	протимікробний
23. antihistamines	антигістамінні препарати
24. blood clotting	згортання крові
25. rate and forcefulness of the heartbeat	частота і сила серцебиття
26. digitalis glycosides	глікозиди наперстянки
27. heart failure	серцева недостатність
28. blood pressure	кров'яний тиск
29. vasodilators	судинорозширювальні засоби
30. vasoconstrictors	судинозвужувальні засоби
31. blood vessels	кров'яні судини
32. neutralize acid	нейтралізувати кислоту
33. multiplication of bacteria	розмноження бактерій

34. disease-causing bacteria	хвороботворні бактерії
35. allergic response	алергічна реакція
36. allergy-causing	такий, що викликає алергію
37. pain-relieving	знеболюючий
38. indigestion	розлад травлення
39. antifungals	протигрибкові засоби
40. antihypertensives	антигіпертензивні засоби
41. stimulate the arteries to enlarge	стимулювати розширення артерій
42. inflammation	протизапальні
43. hypothalamus	гіпоталамус
44. fever-reducing	жаропонижуючі
45. antiviral	противірусні
46. to suppress cough	пригнітити кашель
47. constipation drugs	послаблюючі ліки (препарати від запору)
48. angina pectoris	стенокардія
49. laxative	проносні засоби
50. to enlarge	розширюватись

Exercise 1. Guess the meaning of the following words and phrases.

Chemical substances; treatment of diseases; drugs obtained from; hormones secreted from glands; to be synthesized in the laboratory; in purified form; multivitamins; treatment of anemia; insulin extracted from the pancreas; the widest

source of natural medicines; to be employed in medicine; fruitful source of drugs; drugs for prevention; despite the extensive development; outstanding example; immediate and amazing results; the chemical type of the active ingredient; drugs that affect blood pressure; relax the muscles of the vessel walls; constrict muscle fibers; to prevent the formation of clots in the blood vessels; viruses that infect the body; relieve disorders; to act against bacteria; remove an allergic response; allergy-causing substance.

Exercise 2. Match the words with their definitions.

1. bacteria	a) prepare and distribute medicines, to administer
2. treatment	b) room or building where scientific work and research is carried out
3. classification	c) amount of medicine, radiation, etc.
4. laboratory	d) the application of drugs to a patient
5. coagulate	e) abnormal and uncontrollable growth of the cells of living organisms, esp. a malignant tumor
6. dose	f) organization of knowledge into categories
7. cancer	g) change from a liquid to partially solid state, to clot
8. dispense	h) microscopic unicellular organism
9. blood	i) a serious illness in which one or both lungs become red and swollen and filled with liquid:
10. pneumonia	j) the red liquid that is sent around the body by the heart, and carries oxygen and important substances to organs and tissue, and removes waste products

Exercise 3. Translate the following sentences into Ukrainian.

1. People have used plants and minerals to relieve or cure diseases since ancient times.
2. They always keep the basic safety rules in the laboratory to prevent any accidents.
3. People knew the healing function of plants many years ago.
4. The scientists are conducting the significant research in the field of vaccination this year.
5. These days medicines are becoming more and more expensive.
6. Many people often buy multivitamins for proper body functioning.
7. Vegetable drugs derived from plants represent the widest source of natural medicines.

Exercise 4. Read and translate the text.

DRUGS

Drugs are chemical substances used in medicine in the treatment of diseases. These chemical substances can come from many different sources. Drugs are obtained from mineral, various parts of plants (roots, leaves, fruit), from animals (hormones secreted from glands). Also, they can be made from chemical substances which are synthesized in the laboratory. Anticancer drugs, such as methotrexate and prednisone, are examples of laboratory-synthesized drugs.

Mineral drugs received from crude natural minerals have been used throughout the centuries and are still used today in purified form. Such minerals as iodine, copper, manganese, cobalt and others are employed in the treatment of many diseases. They are contained in various multivitamins. Such wide-spread mineral as iron oxide was used by the ancient Greek physicians in the treatment of anemia. Today iron in purified form constitutes specific therapy for certain types of anemia.

Since the earliest records of **medicine, the organs of animals** have been used in the treatment of diseases. Originally this treatment was entirely empirical. Today, it represents one of the greatest achievements of modern medicine. Extracts or whole

organs are employed therapeutically in replacement therapy. Desiccated thyroid gland is used in treatment of thyrodism. Insulin extracted from the pancreas – in the treatment of diabetes mellitus. A purified extract of the anterior pituitary can be used to stimulate production of hormones by the adrenal cortex.

Vegetable drugs derived from plants represent the widest source of natural medicines. The roots, leaves, flowers, seeds and other parts of plants were the principal sources of drugs used by a primitive man. Nowadays a wide variety of substances of plant origin are employed in medicine. Some vegetable drugs, such as belladonna, opium, digitalis have no satisfactory substitutes. Despite the extensive development of drug synthesis in chemical laboratories and pharmaceutical plants, medicine is still dependent upon nature for many important drugs.

Currently the most fruitful source of drugs is the **organic chemistry** laboratory. Many drugs are produced there in a purer state. The use of pure drugs is the ultimate objective of the pharmacologist. In recent years pharmacologists and chemists have been very successful in producing drugs for prevention, treatment and alleviation of diseases. An outstanding example is sulfonamides. These medicines were first produced in 1935 exclusively in a chemical laboratory. They became “miracle” drugs which gave immediate and amazing results in the treatment of many infectious diseases including pneumonia.

Due to discovery of effective and pure drugs people today can live longer.

There are many drug **classifications i**n the modern pharmacology. Each drug can be classified into one or more drug classes. Moreover, drugs may be grouped by the chemical type of the active ingredient or by the way it is used to treat a particular condition. According to the most general classification, drugs can be divided into such groups: neuropharmacological, cardiovascular, and gastrointestinal drugs, antimicrobials, antihistamines and vitamins.

Neuropharmacological drugs are the drugs acting on the human nervous system.

The drugs that affect the heart, blood pressure and prevent blood clotting are known as **cardiovascular drugs**. The most common drugs used to change the rate and forcefulness of the heartbeat are digitalis glycosides. These drugs are used to treat

patients with heart failure. The drugs that affect blood pressure are vasodilators and vasoconstrictors. **Vasodilators** relax the muscles of the vessel walls; **vasoconstrictors** constrict muscle fibers around the blood vessel opening. **Anticoagulants** are used to prevent the formation of clots in the blood vessels. Aspirin is the widely used anticoagulant.

Gastrointestinal drugs relieve disorders of the gastrointestinal tract. For example, antacids (aluminum hydroxide, sodium bicarbonate) neutralize acid in the digestive system. Drugs that kill or help to prevent multiplication of bacteria or viruses that infect the body are called **antimicrobials**. Antimicrobials that act against bacteria include antibiotics and sulfonamides (sulfa drugs).

Antibiotics are obtained from naturally occurring microorganisms. **Sulfa drugs** are prepared synthetically. A large dose of penicillin or certain other antibiotics kills disease-causing bacteria. A smaller dose of such an antibiotic as well as of a sulfonamide keeps bacteria from multiplying. Antimicrobials that act against viruses are known as antiviral drugs. For example, the antiviral drug zidovudine is used in the treatment of AIDS.

Antihistamines block the action of histamine and remove an allergic response to the allergy-causing substance.

Vitamins are necessary for proper body functioning.

Analgetics: pain-relieving drugs.

Antacids (Antiacids): drugs used for relief of symptoms of indigestion or disorders caused by excess acid. These medications work to neutralizing stomach acids.

Antiarrhythmics: medications used to control unwanted variations in heart rhythms.

Antidepressants: mood-lifting drugs.

Antidiabetic agents: drugs used in the treatment of diabetes. Antidiabetics drugs are used to restore the body's ability to use sugar normally.

Antifungals: drugs used to treat infections caused by fungi.

Antihypertensives: medications prescribed to reduce high blood pressure.

Anti-inflammatory agents: drugs used to reduce inflammation.

Antipyretics: fever-reducing drugs. These drugs directly affect the temperature-regulating centre in the brain and the hypothalamus.

Antivirals: drugs used to treat viral infections.

Bronchodilators: drugs that open (dilate) the main airways (bronchi) in the lungs. They are primarily used to treat asthma.

Corticosteroids are used principally as anti-inflammatory drugs.

Cough suppressants: they are used to suppress cough.

Diuretics: these drugs increase the volume of urine and salt released by the kidneys.

Hypnotics: sleeping medications.

Laxatives: constipation drugs.

Nitrates: heart drugs. They may increase blood flow through the coronary arteries and often are used in patients with angina pectoris.

Vasodilators: heart drugs. These medications stimulate the arteries of the heart to enlarge. They are used to treat angina pectoris or lower blood pressure.

Medications are divided into **over-the-counter drugs** (OTC) which are available without special restrictions, and **prescription only medicines** (POM), which must be prescribed by a licensed medical practitioner. Drugs are dispensed and stored in an area known as a pharmacy. Some drugs are potent and can be dangerous if taken in an overdose. In fact, any medicine can cause mild or severe side effects. Therefore, its use must be strictly controlled.

Exercise 5. Complete the sentences with the words in the box.

treatment	classified	prevent
pharmacy	antacids	drug synthesized
active	potent	antihistamines

1. Drugs may be classified by the chemical type of the _____ ingredient or by the way it is used to treat a particular condition.

2. _____ block the action of histamine.

3. For example, _____ (aluminum hydroxide, sodium bicarbonate) neutralize acid in digestive system.

4. Drugs are chemical substances used in medicine in the _____ of diseases.

5. There are many _____ classifications in the modern pharmacology.

6. Drugs that affect the heart, blood pressure and _____ blood clotting are known as cardiovascular drugs.

7. Drugs can be made from chemical substances which are _____ in the laboratory.

8. Each drug can be _____ into one or more drug classes.

9. Drugs are dispensed and stored in an area known as a _____.

10. Some drugs are _____ and can be dangerous if taken in an overdose.

Exercise 6. Fill in prepositions where necessary.

1. Anti arrhythmics control unwanted variations ___ heart rhythms.
2. Iron oxide was used ___ the ancient Greek physicians __ the treatment of anemia.
3. Drugs can be made ___ chemical substances.
4. Medicine is still dependent ___ nature for many important drugs.
5. Insulin is extracted ___ the pancreas.
6. Vasoconstrictors constrict muscle fibers ___ the blood vessel opening.
7. Diuretics increase the volume of urine and salt released ___ the kidneys.
8. OTC drugs which are available ____ special restrictions.
9. Antimicrobials act ___ bacteria.
10. Prescription only medicines (POM) must be prescribed ___ a licensed medical practitioner.
11. Even a small dose of antibiotic keeps bacteria ____multiplying.
12. Neuropharmacological drugs act ___ the human nervous system.

Exercise 7. Are these statements true or false? Correct false ones.

1. Drugs are dispensed and stored in a pharmacy. **(T/F)**
2. Drugs are made from chemical substances synthesized only in the laboratory. **(T/F)**
3. Neuropharmacological drugs act on the digestive system. **(T/F)**
4. Antimicrobials that act against bacteria include antibiotics and diuretics. **(T/F)**
5. Drugs are chemical substances used in medicine in the treatment of diseases. **(T/F)**
6. All drugs must be prescribed by a licensed medical practitioner. **(T/F)**

7. Anticancer drugs (methotrexate and prednisone) are laboratory-synthesized drugs. **(T/F)**

8. A small dose of penicillin kills disease-causing bacteria. **(T/F)**

9. Antidiabetics drugs restore the body's ability to use vitamins and multivitamins normally. **(T/F)**

10. The antiviral drug zidovudine is used in the treatment of angina pectoris. **(T/F)**

11. Vasodilators stimulate the arteries of the heart to narrow. **(T/F)**

12. Nitrates increase blood flow through the coronary arteries and often are used in case of heart failure. **(T/F)**

Exercise 8. Read the text again and answer the questions.

1. What is drug?

2. How are drugs classified?

3. What can be drugs obtained from?

4. What drugs are used to kill or help to prevent multiplication of bacteria or viruses that infect the body?

5. Which way are sulfa drugs prepared?

6. What drugs can produce a positive effect on the heart?

7. How do antibiotics act?

8. What change do vasodilators trigger in the human blood pressure?

9. What are OTC drugs and POM?

10. When do the doctors prescribe antibiotics?

11. What are antifungals drugs used for?

12. What is the function of Nitrates and in what cases are they used?

13. What drugs are used to treat asthma?

14. What do people take vitamins? Are they always useful?

15. What drugs affect the temperature-regulating centre in the brain and the hypothalamus and reduce fever?

Exercise 9. A) Complete the text with the words given below.

MECHANISM OF DRUG ACTION

Drugs used in therapy act upon the body by the following way: stimulation, depression, irritation, replacement therapy and chemotherapy. But a drug may possess more than one activity and that is why it may fit in more than one category.

_____ means increasing the activity of specialized cells. For example, caffeine stimulates or _____ the reflex activity of the spinal cord.

Drug _____ decreases the activity of specialized cells. Depressive action of drugs is quite selective foe special cells. The barbiturates depress the central _____ system. Codeine depresses the cough center in the medulla.

Drug _____refers to the action of a drug on the nourishment, growth, and morphology of the cell. Irritation may be of various degrees. Mild irritation may be used to stimulate activity of tissues.

Replacement therapy refers to the use of extracts of organs, dried organ tissue, or their synthetic substitutes in the treatment of a deficiency state. The use of insulin in the treatment of _____ mellitus is an example of replacement therapy.

Chemotherapy is administered to attenuate or _____ pathogenic organisms without toxicity to the host. The main task in using chemotherapy is _____ a wide safety and general therapeutic value with the minimal to the patient. Not all drugs are directed at the cause of disease. Much therapy is only symptomatic. It may _____ the symptoms but doesn't remove etiologic factor. Thus, morphine doesn't assist in wound healing or cancer treatment, but allows the patient to sleep and rest.

(Stimulation, irritation, nervous, increases, depression, relieve, to achieve, diabetes, kill, toxicity)

B) Give English equivalents to the following words and phrases:

Нервова система, подразнення, досягати безпеки, помірне подразнення, полегшувати симптоми, кашльовий центр, вбивати патогенні організми, токсичність, терапевтична цінність, етимологічний фактор, замінна терапія, хіміотерапія.

C) Answer the following questions:

1. How do drugs act upon the body?

2. What does stimulation mean?

3. How does drug depression act?

4. What does replacement therapy mean?

5. What is the main task in using chemotherapy?

6. What is the characteristic of therapy?

7. Why is the relief of symptoms important?

D) Ask questions to which the following could be answers. Start your questions with the words in brackets.

1. A drug may possess more than one activity? (How many….?)

2. Coffeine stimulates cortical activity. (What …?)

3. Replacement therapy refers to the use of extracts of organs. (Where … to?)

4. They use insulin in the treatment of diabetes mellitus. (When …?)

5. Chemotherapy kills pathogenic organisms. (What …?)

6. Morphine allows the patient to sleep and rest. (What …?)

Exercise 10. Read and translate the text.

FORMS OF DRUGS

Drugs fall into three main forms: solids, semisolids and liquids. In each particular case doctor decides what form of medication must be administered. For example, a patient cannot swallow tablets, especially small children. In this case they always receive medications in a liquid form. Sometimes multiple diseases complicate the picture. For instance, a patient with peptic ulcer cannot take a cough syrup containing the irritating ammonium chloride. If he has to take something for cough it should be an alternative drug without bad influence on his stomach.

Solid forms of medications include tablets, pills, powders, dragee, capsules and species. Tablet is a solid dosage form, of varying weight, size and shape, which may be molded or compressed. It contains a medical substance in pure or diluted form. According to the way of their use the tablets are divided into: peroral, sublingual, tablets for injectable solutions, tablets used to prepare solutions for gargling and irritation. Tablets may be coated with sugar, gelatin, chocolate, suitably coloured and

flavoured. They are produced by pharmaceutical plants and dispensed in boxes or bottles of 20 to 100.

Pills are small balls of variable size, shape and colour, coated with sugar. They contain one or more medical substances in a solid form. They are taken by mouth.

Powder is a substance made up of an aggragation of small particles by means of gringing or trituration of a solid drug. According to the number of ingredients the powders are divided into simple or compound. There are powders for external and internal use.

Capsule is a structure in which medication is enclosed. It is soluble container of a suitable substance: gelatin or starch. Usually, capsules enclose a dose of medication which has a bad taste, smell or can irritate the mucos membrane of the oral cavity, digestive track or the teeth.

Dragee is a sugar-coated pill, or medicated confection. Vitamins are usually prescribed in the form of dragee.

Semisolids forms of medications include ointments, liniments, pastes, suppositories and plasters. Semisolids are greasy by touch. Ointment is a semisolid preparation, which may or may not contain medication, for external application to the body. Ointments are made on a special base. Vaseline, lanolin, depurated pork lard are common bases for ointment. Some ointments may be applied on the mucos membranes or eyes.

Liniments are also semisolids, but they contain more liquid preparation. They are rubbed onto the skin or applied on a surgical dressing.

Suppository is a medicated mass adapted for insertion into the rectum or vagina. Suppositories are solid at room temperature but melt at body temperature. They may contain drugs that act locally.

Liquid forms of medications include a great number of various drugs. They are: solutions, emulsions, infusions, decoctions, tinctures, extracts, mucilages, mixtures and syrups.

Solutions make up a big class of liquid preparations. They may contain one or several soluble chemical substances dissolved in water or other solvents. Due to the

type of solvent all solutions are divided into ware, spiritus and oil ones. They are administered for internal and external use.

Emulsion is a preparation in which fine droplets of one liquid (such as oil) are dispersed in another liquid (such as water).

Extract is a concentrated preparation of a vegetable or animal origin obtained by removing the pharmacologically active constituents by means of evaporating a solution of the drug in water, spirit or ether. All extracts are divided into: water, oil, spirituous or alcoholic, ethereals extracts. As to their consistency extracts are divided into: fluid, thickened and dry.

Syrups are thickened, transparent liquids for internal use which have the taste and smell of their constituents. Syrups are flavouring and medical. Medical syrups are used as medicines themselves. They are the syrups of rhubarb, licorice, marshmallow, dog-rose etc.

Exercise 11. Give English equivalents to the following words and phrases.

Тверді лікарські форми, м'які (напівтверді) лікарські форми, рідкі лікарські форми, ковтати таблетки, ускладнені захворювання, пігулки, порошки, мазі, креми, лініменти, мікстури, дозована форма, стискувати (здавлювати), розведена форма, бути покритим (оболонкою), розподіляти, простий порошок, складний порошок, подразнювати слизову оболонку, у чистій формі. Забарвлювати, надавати смаку, фармацевтичний завад, приймати через рот, для зовнішнього (внутрішнього) застосування, неприємний смак(запах), містити лікувальний засіб, твердий при кімнатній температурі, танути при температурі тіла.

Exercise 12. Are these statements true (T), false (F)? Give true sentences.

1. Drugs fall into two main forms. **(T/F)**
2. Tablet is a semisolid dosage form, of varying weight, size and shape, which may be molded or compressed. **(T/F)**
3. Capsules are small balls of variable size, shape and colour, coated with sugar. **(T/F)**
4. Powder is a structure in which medication is enclosed**. (T/F)**
5. Liniments are rubbed onto the skin or applied on a surgical dressing. **(T/F)**

6. Syrups make up a big class of liquid preparations. **(T/F)**

7. Due to the type of active ingredient all solutions are divided into ware, spiritus and oil ones. **(T/F)**

8. Extract is a concentrated preparation of a vegetable or animal origin. **(T/F)**

Exercise 13. Answer the following questions:

1. What are the main forms of drugs?
2. What forms of medicines do solids include?
3. What are semisolids?
4. What kind of liquids do you know?
5. What is a tablet?
6. How are tablets used?
7. What is the difference between capsule and dragee?
8. What is powder?
9. What kinds of medications belong to semisolids?
10. Why are ointments more effective than creams?

Exercise 14. Read the dialogue between two girl-friends Julia (J) and Ann (A) and answer 5 questions below.

- **(J)** Last week I felt myself terrible. I even had to call a doctor.
- **(A)** Oh, really? What happened?
- **(J)** I had a very high temperature, fever they called it. And also these dark spot round my eyes… I can hardly stayed on feet.
- **(A)** Did you called the doctor? Did he come?
- **(J)** Sure he came. He examined me: took my temperature, blood pressure and performed some tests I can't explain to you.
- **(A)** And what is the diagnosis?
- **(J)** Still unknown. I have to wait for the analyses he took. But now I'm taking some drugs, and a nurse comes twice a day to give me intravenous injections. It's quite painful, I must say.
- **(A)** Well, wait a little. Wish you to recover soon.

1. What happened with Julia?

2. What symptoms did she have?
3. Did she call a doctor?
4. Did doctor examine Julia? What did he do?
5. What treatment did doctor prescribe to the girl?

Exercise 15. Make up dialogues using the following words and word combinations:

1. Heart attack, terrible pain in the chest, sublingual, ambulance, examine, take blood pressure, make an injection, insist on hospitalization.

2. Raw eggs, vomiting, nausea, headache, acute form, poisoning, drugs, useless, cleanse the stomach, absorbing drugs, drink a lot of liquid.

3. Acute toothache, teeth extracted, local anesthesia, syringe, intradermal injection, normal reaction, successfully.

4. Catch a cold, high temperature, fever, bad headache, cough, improve, shortness of breath, sore throat, running nose.

Exercise 16. What facts can you present to your group about:

1. Natural and synthesized drugs: which are safer?
2. Drug classification.
3. Over-the-counter medications.
4. Prescribed medicines.
5. Forms of drugs.
6. Drug addiction.
7. Self-medication.

5.2 ADMINISTRATION OF DRUGS

Speaking

1. What ways of drug administration do you know?
2. Is way of drug administration important? Why?
3. What is the most effective way of drug administration?
4. Give examples of drugs you know and the ways they are used?

Active Vocabulary

1. Absorption	поглинання
2. application	застосування
3. bloodstream	потік крові
4. completeness	повнота
5. dissolve	розчиняти
6. cone-shaped	конусоподібний
7. injection	ін’єкція
8. insert	вставити
9. intracavitary	внутрішньопорожнинний
10. lesion	ураження
11.nitroglycerin	нітрогліцерин
12. parenteral	парентеральний
13. route	спосіб, маршрут
14. rectal	ректальний
15. sublingual	сублінгвальний
16. suppository	супозиторій
17. syringe	шприц
18. vomiting	блювота

Exercise 1. Translate into Ukrainian:

Completeness of medicine absorption; speed and duration of the drug's action; to administer drugs; to absorb through the intestinal wall; to be destroyed in the digestive tract by digestive juices; through the intestinal mucosa; sublingual administration; to place under the tongue; to dilate coronary arteries; to increase blood flow; to present difficulties; injection through a syringe; to irritate the skin; a large volume of a long-acting drug.

Exercise 2. Match the words with their definitions

1. administration	a) the thin skin that covers the inside surface of parts of the body such as the nose and mouth and produces mucus to protect them
2. orally	b) relating to treatment that does not come through the digestive system, for example drugs that are injected into the veins or muscles
3. mucosa	c) inside a muscle, or put into a muscle
4. parenteral	d) entering the body through the mouth
5. sublingual	e) the acids in your stomach that break food into smaller parts
6. intramuscular	f) a medical condition in which you have bad pains in your chest because your heart is weak
7. digestive juices	g) under the tongue
8. angina	h) the act of giving someone something

Exercise 3. Complete the following sentences using words from 2.

1. There are strict controls on the _____of drugs.
2. The drug is designed to be taken _____.
3. Indeed that smell did stimulate the _____.
4. The _____tablets relax the arteries of the heart.
5. If possible, this should be given as a course of daily _____injections.

Exercise 4. Read and translate the text.

ADMINISTRATION OF DRUGS

The route of administration of a drug is very important in determining the rate and completeness of its absorption into the bloodstream and speed and duration of the drug's action in the body. Different methods are used to administer drugs.

Oral administration is a route of administration where a substance is taken through the mouth. Oral administration is a part of enteral administration. Drugs given orally must pass into the stomach and be absorbed into the bloodstream through the intestinal wall. This method may have several disadvantages. If the drug is destroyed in the digestive tract by digestive juices or if the drug cannot pass through the intestinal

mucosa, it will be ineffective. Oral administration is slower than other methods and disadvantageous if time is a factor in therapy.

In ***sublingual administration*** drugs are not swallowed. They are placed under the tongue and allowed to dissolve in the saliva. Absorption is rapid for some agents. Nitroglycerin is taken this way to treat attacks of chest pain (angina pectoris) in order to be rapidly absorbed into the bloodstream and dilate coronary arteries to increase blood flow to the heart muscle.

Suppositories and water solutions are supposed to be inserted into the rectum. This type of drug use is known as ***rectal administration*** and indicated when oral administration presents difficulties (patient is nauseated and vomiting).

Parenteral administration is accomplished by injection through a syringe under the skin, into a muscle, into a vein, or into a body cavity. In this type of administration gastrointestinal tract is omitted. There are several types of parenteral injections:

Subcutaneous injection. This injection is sometimes called a hypodermic injection and is given just under the several layers of the skin. The outer surface of the arm and the anterior surface of the skin are usual locations for subcutaneous injections.

Intradermal injection. This shallow injection is made into the upper layers of the skin. It is used chiefly in skin testing for allergic reactions. Short needles are used, and an elevation appears on the skin when an intradermal injection is given properly.

Intramuscular injection. This injection is given into the muscle, usually into the buttocks. When drugs are irritating to the skin or when a large volume of a long-acting drug is to be given, intramuscular injections are advisable.

Intravenous injection. This injection is given directly into the vein. It is given when an immediate effect from the drug is desired or when the drug cannot be given into other tissues. Good technical skill is needed in administering this injection as leakage of drugs into surrounding tissues may result in damage to tissues. Besides, entering air into a vein can lead to immediate death.

Intrathecal injection. This injection is made into the sheath of membranes (meninges) which surround the spinal cord and brain. The effects of the drug so

administered are usually limited to the central nervous system, and intrathecal injections are often used to produce anesthesia.

Intracavitary injection. This injection is made into a body cavity, as, for example, into the peritoneal or pleural cavity.

Inhalation. In this method of administration, vapors or gases, are taken into the nose or mouth and are absorbed into the bloodstream through the thin walls of the air sacs in the lungs. Aerosols can be administered by inhalation. This way is the only one possible when patient has asthma attack.

Topical application. This is the local external application of drugs on skin or mucous membranes of the mouth or other surface. Topical application may also include administration of drugs into the eyes, ears, nose, and vagina. It is commonly used to accelerate the healing of abrasions, for antiseptic treatment of a wound, and as an antipruritic (against itching). Lotions are used most often when the skin is moist, or "weeping," and ointments and creams are used when the lesions are dry.

Exercise 5. Put the sentences in the order they appear in the text.

1.	Drugs given orally must pass into the stomach and be absorbed into the bloodstream through the intestinal wall.	
2.	The nitroglycerin is rapidly absorbed into the bloodstream and opens coronary arteries to increase blood flow to the heart muscle.	
3.	This injection is given into the muscle, usually into the buttocks.	
4.	Good technical skill is needed in administering this injection as leakage of drugs into surrounding tissues may result in damage to tissues.	
5.	At times, drugs are given by rectum when oral administration presents difficulties, such as when the patient is nauseated and vomiting.	

6.	If the drug is destroyed in the digestive tract by digestive juices or if the drug cannot pass through the intestinal mucosa, it will be ineffective.	
7.	Short needles are used, and an elevation appears on the skin when an intradermal injection is given properly.	
8.	This injection is made into a body cavity, as, for example, into the peritoneal or pleural cavity.	
9.	The outer surface of the arm and the anterior surface of the skin are usual locations for subcutaneous injections.	
10.	This type of administration is accomplished by injection through a syringe under the skin, into muscle, into a vein, or into a body cavity.	

Exercise 6. Match the words (1-8) from the text with their definitions (a-h).

1. syringe	a) eject matter from the stomach through the mouth
2. absorption	b) the action of breathing in
3. wound	c) medical device that is used to inject fluid into, or withdraw fluid from, the body
4. injection	d) empty space within a solid object
5. skin	e) an injury to living tissue caused by a cut, blow, or other impact, typically one in which the skin is cut or broken
6. cavity	f) thin layer of tissue forming the natural outer covering of the body of a person or animal
7. vomit	g) method of putting fluid into the body, usually with a syringe
8. inhalation	h) process by which one thing absorbs or is absorbed by another

Exercise 7. Complete the sentences with the words in the box below.

1. This injection is made into a body _____, as, for example, into the peritoneal or pleural cavity.

2. Lotions are used most often when the skin is _____, or "weeping," and ointments and creams are used when the lesions are dry.

3. The outer surface of the arm and the anterior surface of the skin are usual locations for _____ injections.

4. This injection is made into the sheath of membranes (_____) which surround the spinal cord and brain.

5. The effects of the drug so administered are usually limited to the central nervous system, and intrathecal injections are often used to _____ anesthesia.

6. Topical _____ may also include administration of drugs into the eyes, ears, nose, and vagina.

7. _____ can be administered by inhalation.

8. It is used chiefly in skin testing for _____ reactions

9. Good technical _____ is needed in administering this injection as leakage of drugs into surrounding tissues may result in damage to tissues.

10. When drugs are irritating to the skin or when a large _____ of a long-acting drug is to be given, intramuscular injections are advisable.

skill, subcutaneous, aerosols, produce, volume, application, cavity, meninges moist, allergic

Exercise 8. Are these statements true (T), false (F)? Give true sentences.

1. The route of administration of a drug is very important in determining the rate and completeness of its absorption into the bloodstream and speed and duration of the drug's action in the body. **(T/F)**

2. When an intradermal injection is given properly short needles are used and an elevation does not appear on the skin. **(T/F)**

3. Lotions are used most often when the skin is dry, or "weeping," and ointments and creams are used when the lesions are moist. **(T/F)**

4. Drugs given orally must pass into the stomach and be absorbed into the blood-stream through the intestinal wall. **(T/F)**

5. Intramuscular injection is given into the muscle, sometimes into the buttocks. **(T/F)**

6. Intrathecal injection is made into the sheath of membranes (meninges) which surround the spinal cord and brain. **(T/F)**

7. Drugs can't be given when oral administration presents difficulties, such as when the patient is nauseated and vomiting. **(T/F)**.

8. Oral administration is quicker than other methods of drug administration. **(T/F)**

Exercise 9. Read the text again. Answer these questions.

1. What ways are drugs usually administered?
2. What does the way of drug administration depend on?
3. When is the sublingual way indicated?
4. What types of parenteral injections are the most frequently used in medicine?
5. What factors predetermine a choice of the type of a parenteral injection?
6. When must the rectal administration be prescribed?
7. What way is a nitroglycerin tablet taken?
8. When should a physician prescribe the topical application of drugs?
9. What way of drug administration, oral or rectal, provides slower action of a medication?
10. What conditions can be relieved by inhalation?

Exercise 10. What facts can you present to your group about:

1. Ways of drug administration;
2. Mechanism of drug action.
3. The poisonous effects of some drugs: when can a doctor prescribe such drugs?
4. Can people live without drugs?

Exercise 11. Read and translate the text

VITAMIN

Vitamins are substances that are essential in certain chemical transformations in the human body. They help the body process proteins, carbohydrates, and fats. Certain vitamins also contribute to the production of blood cells, hormones, genetic material, and chemicals of the nervous system.

Vitamins exist in minute quantities in food. Most vitamins cannot be produced by the body and must be obtained through the diet. Since no single food item or nutrient class provides all the essential vitamins, it is necessary to eat a variety of foods. For example, vitamin A is needed for the eyes and to keep the linings of the bronchial, urinary, and intestinal tracts healthy; vitamin C is needed for the development of bones, teeth, blood vessels, and other tissues; vitamin K is necessary for blood clotting; and vitamin D is also needed for the development of bones and teeth.

The principal vitamins are: vitamin A, vitamin B1, vitamin B2, pantothenic acid (part of the B2 complex), vitamin B3, vitamin B6, folic acid, vitamin B12, vitamin C, vitamin D, vitamin E, vitamin H (often considered part of the B-vitamin group), and vitamin K.

Some vitamins (e.g., vitamin K) are produced by intestinal bacteria, and a few can be formed by the body from substances called provitamins (portions of vitamins that can be assembled or modified by the body into functional vitamins). Carotene is an example of a provitamin that can be modified by the body to form vitamin A. Vitamins are used by the body in their original or slightly modified forms. Once the chemical structure of a vitamin is destroyed, its function is usually lost. The chemical structure of many vitamins is destroyed by heat (e.g., when food is overcooked).

There are two major classes of vitamins: fat soluble and water soluble. Fat-soluble vitamins such as vitamins A, D, E, and K are absorbed from the intestine along with lipids, and some of them can be stored in the body for a long period of time. Because they can be stored, it is possible to accumulate an overdose of these vitamins in the body (hypervitaminosis) to the point of toxicity. Water-soluble vitamins such as the B complex and C are absorbed with water from the intestinal tract and remain in the body only a short time before excreted.

The absence of a specific vitamin in the diet can result in a specific deficiency disease.

Vitamins are compounds that you must have to growth and health. They are needed in small amounts only and are usually available in the foods that you eat. Vitamin A is necessary for normal growth and health and for healthy eyes and skin. Lack of vitamin A may lead to a rare condition called night blindness (problems seeing in the dark), as well as dry eyes, eye infections, skin problems, and slowed growth. Your physician may treat these problems by prescribing vitamin A for you. Vitamin A is found in various foods including yellow-orange fruits and vegetables; dark green, leafy vegetables; whole milk; and margarine. Vitamin A comes in different forms. The form of vitamin A found in plants is called beta-carotene. Food processing may destroy some of the vitamins. For example, freezing may reduce the amount of vitamin A in foods. Vitamin A is stored in the body and taking too much over a period of time can cause poisoning. Vitamin B2 (riboflavin) is necessary for normal metabolism. Lack of vitamin B2 may lead to itching and burning eyes, sensitivity of eyes to light, sore tongue, itching skin on the nose, and sores in the mouth. Vitamin B2 is found in various foods, including milk and dairy products, fish, meat, green leafy vegetables, and whole grain and enriched cereals and bread.

Vitamin B12 is necessary for healthy blood. Cyanocobalamin and hydroxocobalamin are man-made forms of vitamin B12. Lack of vitamin B12 may lead to anemia, stomach problems, and nerve damage. Vitamin B12 is found in various foods, including fish, egg yolk, milk, and fermented cheeses. It is not found in any vegetables.

Vitamin E prevents a chemical reaction called oxidation, which can sometimes result in harmful effects in the human body. Lack of vitamin E is extremely rare, except in people who have a disease in which it is not absorbed into the body. Vitamin E is found in various foods including vegetable oils (corn, soybean), wheat germ, whole-grain cereals, and green leafy vegetables. Vitamin E is stored in the body and taking too much over a period of time may cause harmful effects. Vitamin K is necessary for normal clotting of the blood.

Vitamin K is found in various foods including green leafy vegetables, meat, and dairy products. If you eat a balanced diet containing these foods, you should be getting all the vitamin K you need. Little vitamin K is lost from foods with ordinary cooking. Lack of vitamin K is rare but may lead to problems with blood clotting and increased bleeding. Vitamin K is routinely given to newborn infants to prevent bleeding problems. It is found in spinach, vegetable oils, and cabbage.

Vitamin D is necessary for strong bones and teeth. Lack of vitamin D may lead to a condition called rickets, especially in children, in which bones and teeth are weak. In adults it may cause a condition called osteomalacia, in which calcium is lost from bones so that they become weak. Vitamin D is sometimes used to treat other diseases in which calcium is not used properly by the body. Vitamin D is found naturally only in fish and fish-liver oils. However, it is also found in other foods such as milk and bread to which it has been added. Cooking does not affect the vitamin D in foods. Vitamin D is sometimes called the "sunshine vitamin" since it is made in the skin when the human is exposed to sunlight. If you eat a balanced diet and get outside in the sunshine, you should be getting all the vitamin D you need.

Exercise 12. Try to organize obtained information in the form of the following table:

Name of vitamin	**Conditions caused by lack of vitamin**	**Products containing vitamin**	**Functions of vitamin**
Vitamin A			
Vitamin B2			
Vitamin B12			
Vitamin E			

Vitamin K			
Vitamin D			

Exercise 13. Make up the dialogue using the obtained information from exercise above.

Exercise 14. Read and translate the following text:

IMPORTANCE OF VITAMIN D

Calcium is essential for strong bones, but to enhance the amount of calcium that ultimately reaches your bones you also need vitamin D.

Your body makes vitamin D from two sources – sunlight and food. Most of the vitamin D the body makes starts with the sun. When you are exposed to ultraviolet (UV) light rays, a chemical in the skin is changed into an inactive form of vitamin D.

Butter, eggs, and fatty fish such as herring, mackerel, and salmon naturally contain vitamin D. Other food sources are foods fortified with vitamin D such as milk, margarine, and some breakfast cereals.

The liver and kidneys work to change vitamin D into the active form the body can use.

Despite the availability of the sun and vitamin D-rich foods, several factors can interfere with obtaining enough of this essential nutrient:

Age. As you get older, your body turns UV rays into vitamin D less efficiently. If you spend limited time outdoors exposed to the sun and don’t drink 2 or more cups of milk a day, you may want to consider a supplement. Don’t take more than 400 IU (units) of vitamin D a day unless prescribed by your physician.

Illness. Kidney or liver disease reduces the ability to change vitamin D into its usable form.

Medications such as phenytoin, prescribed for seizure disorders, can also lead to vitamin D deficiency.

Vitamin D is like no other nutrient in that one of the best ways to obtain it has nothing to do with food. Although excessive sun exposure isn't healthful for your skin, a little bit of sun good for your bones.

Exercise 15. Speak on the importance of vitamin D.

Exercise 16. Read the following abstract and memorize it:

Myth: Vitamins provide energy.

Fact: Calories from fat, carbohydrate, and protein provide energy. Vitamins don't have calories, so they can't give energy. The myth likely stems from the action of B vitamins. They don't actually provide energy. Yet each of the eight B vitamins plays a critical role in the chemical reactions that release energy from foods.

Exercise 17. Translate the text "Medicinal Herbs" into Ukrainian.

MEDICINAL HERBS

Medicinal herbs have been used for centuries to treat everything from depression to high blood pressure and cancer. Herbs have been the principals if not the only medicines used in many countries. Recently doctors and other medical professionals have started realizing the importance of these medicinal herbs and their potential for treating and curing a wide variety of ailments as an alternative to pharmaceutical drugs and medications.

Medicinal herbs covering a wide range of types of plants are well known to everybody. The parts of the plants used for medicine may be their leaves, flowers, roots, seeds or bark.

Herbs are the source of pharmacologically active substances that effect the living organism.

Dr. Varro Tyler, Professor of Pharmacognosy at the Purdue University School of Pharmacy and Pharmacological Sciences, defines herbs as “crude drugs of vegetable origin utilized for treatment of states, Medicinal Herbs often of chronic nature, or to maintain a condition of improved health.”

The early Romans and ancient Egyptians and Indians used herbs for many medicinal purposes. Modern medicine investigates the benefits of herbs through Pharmacognosy – a study of crude forms of plant, animal and mineral medicines. Medicinal herbs strengthen an organ so that it can heal itself. Some medicinal herbs purge the body of toxins and illnesses, while others build up the immune system, which will help in retarding illness. There are many ways in which herbs can be prepared to be used to medicinal purposes:

Compress Soak a cloth in a cool herb solution, then apply directly to the injured area.

Decoction Make a tea from the root, seed, berry, or bark of the herb plant. Simmer the tea, do not boil.

Essential Oils Oils are distilled from plants. Usually, they are mixed with vegetable oil or water and used as an inhalant or tea. Also, they may be used as eyewash, earwash, mouthwash, or used externally for massage, and to treat cuts and abrasions.

Extracts Place the herbs in a solvent and soak, allowing the solution to evaporate. This solution is the most effective form of using herbs. The herb extracts are very beneficial in healing. They may be added to juices.

Ointment It is a powdered form of an herb added to a salve.

Powder The useful part of a herb is ground into a powder and is also used in capsule or tablet form. Capsules and tablets are generally used for certain disorders and should be used no longer than six months.

Syrup A herb or herbs are added to a form of sugar and then boiled.

Tincture Usually, most tinctures contain about 20-50% alcohol. Powdered herbs are added to a water/alcohol solution. Tinctures keep for a long period of time and should only be used if severely ill.

Tea To prepare herb tea, use approximately one to three teaspoons of herbs per cup of boiling water.

Leave herbs to steep for at least five minutes, but don't leave for longer than ten minutes. The potency of the herb is destroyed by light. Mild teas may be used daily as tonics and for general health and well-being. Herb teas, usually, may be used over long periods of time.

Before starting any course of medicinal herbs, notify your doctor because they may interact with any medicines you are currently taking.

Exercise 18. Translate the following words and word-combinations into English:

Мазь; лікарська сировина; насіння; уповільнювати, затримувати; кора; використовувати, вживати; очищати; лікувальний відвар, відвар з лікарських рослин, декокт; варити, не доводячи до кипіння; випаровуватися; порошкоподібний; цілюща мазь; молоти(ся), розтирати (у порошок); затримувати; зараз, в даний час.

Exercise 19. Insert the missing words:

1. Medicinal _ have been used for centuries to treat different diseases. 2. Herbs have been the principal _ used in many countries. 3. The parts of the plants used for medicine may be their leaves, flowers, roots, _ or _. 4. Herbs are the source of pharmacologically active substances that effect the _ organism. 5. There are many ways in which herbs can be prepared to be used to medicinal purposes: compress, _, essential oil, extract, __, powder, syrup, _, and tea.

Exercise 20. Answer the following questions:

1. How long have medicinal herbs been used?
2. What parts of the plants are used for medicine?
3. What is medicinal herb?
4. In what cases are medicinal herbs used?
5. What are the ways in which medicinal herbs can be prepared?

6. Do you use any medical herbs?

7. What medical herbs are popular in our country?

8. What medical herbs do you use?

Exercise 21. Write out key words of the text "Medicinal Herbs". Speak on the medicinal herbs, their healing properties and the ways in which they can be prepared.

SUPPLEMENTARY TEXTS

Text 1. Medicine

Medicine is the science and art of healing. Medicine is a science because it is based on knowledge gained through careful study and experimentation. It is an art because it depends on how skillfully doctors and nurses and other medical workers apply the knowledge when dealing with patients.

The goals of medicine are to save lives and to relieve suffering. For this reason, medicine has long been one of the most respected professions. Many thousands of men and women who work in medical professions spend their lives caring for the sick.

Today doctors head medical teams made up of nurses, laboratory workers, and many other skilled professionals. The care provided by such teams cannot generally be started at home. As a result, health centers, clinics, and hospitals have become the chief centers for medical care in most countries.

Medical care consists of three main elements: the first is (lie diagnosis or identification of disease or injury; the second is the treatment of disease or injury; the third is the promotion of health and prevention of disease. Medical care is provided by a variety of specially trained people. Doctors take charge of treating the sick. Nurses help doctors to care for patients. Other trained workers also help to provide health care.

People usually recover from minor illnesses and injuries without special treatment. In these cases, doctors may simply reassure their patients and allow the body to heal itself. But serious diseases generally require special treatment. In these cases, a doctor may prescribe drugs, surgery or other treatment.

Text 2. From the History of Medicine

The search for health is as old as the history of mankind. In Babylon it was a custom to show the sick in the streets, so that passers-by could say how to treat the sick from their own experience. It was not allowed to pass a sick man in silence.

A papyrus was found dating back to 1600 B.C. about surgery and treatment of wounds. Then another papyrus was found with about 900 prescriptions, some of these prescriptions are used by doctors today. People learn much from Egyptian manuscripts and from embalmed bodies. Examination of some of these bodies showed many

interesting facts. For example, people of those times knew such diseases as rheumatoid arthritis, tuberculosis and appendicitis.

Clinical medicine and health protection greatly developed in Roman times. The name of Galen is widely known. Galen worked first as a surgeon at a school for gladiators. He went to Rome when he had much practice, but he continued to experiment on living animals, especially apes and pigs.

The Roman army had a well-organized service of surgeons. The gladiators' school was an ideal school for training in surgery.

Text 3. Some Notes from the History of Anatomy and Physiology

Anatomy as an independent science dates from the 16th century. Its founder was Andreas Vesalius (1514-1564) who dissected1 numerous human corpses and studied the structure of the human body. His studies were summarized in the outstanding scientific work The Structure of the Human Body which was highly praised by Academician I. P. Pavlov.

Physiology as an independent science was founded in the 17th century. Its foundation is connected with the name of William Harvey (1578-1657), the English physician who discovered blood circulation.

In the 19th and 20th centuries great advances in various branches of medicine, physiology in particular, were wade. These advances are in large measure due to contributions of Russian scientists.

The first medical school in Russia was organized in the middle of the 17th century. By that time there were Russian manuals containing information on medicine, and anatomy was studied from skeletons. Regular training of medical workers, some of whom subsequently became outstanding scientists, began in the 18th century (during the reign of Peter I). Brilliant Russian scientist M. Lomonosov made a great contribution to the development of natural science and medicine in Russia. As a result of his efforts the first Russian University with a school of medicine was opened in Moscow. Lomonosov's works had a direct bearing on physiology.

In the 19th century many Russian scientists worked in the fields of anatomy and physiology. The works of PA. Zagorsky, I.V. Buyalsky and M.I. Pyrohov influenced greatly the development of Russian anatomy.

P.A. Zagorsky (1764-1846), Professor of anatomy and physiology, studied the vascular system. He wrote a textbook of anatomy in Russian and his pupils were the first Russian anatomists. One of them was I.V. Buyalsky (1789-1866), the author of numerous works on anatomy and surgery. Buyalsky's most important contribution was that his works demonstrated the great importance of anatomy to practical surgery.

Brilliant Russian scientist M.I. Pyrohov (1810-1881) studied surgery, anatomy and other branches of medicine. He introduced a new method of anatomy by anatomical research. He set out the fundamentals of topographic anatomy by this method. One of his best-known works on anatomy is the book called *Surgical Anatomy of the Vascular Trunks and Fasciae.* His work emphasizes the importance of anatomy to practical medicine, especially surgery.

Text 4. Prominent Scientists and Physicians of Ukraine

A well-known Ukrainian scientist O. M. Shumlyansky was the prominent anatomist-microscopist of the 18th century. He was the first who described the kidney texture. O. M. Shumlyansky was born in 1748 in the village Yakivtsi of Poltava region. He graduated from the medical school in Petersburg and worked as a surgeon. Then he improved his education in the field of obstetrics and received his doctor's degree. O.M. Shumlyansky was a professor of the medical surgical school in Moscow. He was the author of many research works in the fields of surgery andobstetrics.

The outstanding Ukrainian anatomist V.P. Vorobyov (1876 – 1937) was born on July 15, 1876 in Odesa. In 1897 he finished gymnasium and entered the Medical Faculty of Kharkiv University. After graduation he worked as a professor at this University. In 1917 V. Vorobyov headed the chair of Normal Anatomy at the Kharkiv Medical Institute. One of the greatest contributions to the world science made by V. Vorobyov was "Atlas on Human Anatomy". This scientific work was of great importance for theoretical and practical medicine.

O. Bohomolets was the founder of a large school of pathophysiologists. O. Bohomolets graduated from the medical faculty at Odesa University in 1906 and worked as a lecturer there. In 1911–1925 he served as a professor at Saratov University in Russia and in 1925–1931 as a professor of pathophysiology at Moscow University; he was also director of the Institute of Hematology and Transfusion in Moscow (1928–1931). In 1931 he moved to Kyiv, where he founded the Institute of Experimental Biology and Pathology and the Institute of Clinical Physiology. He demonstrated that connective tissue had a protective function in the organism and played a role in its nourishment. Bohomolets wrote many works in Biology, Physiology, and Pathology and gained world-wide fame.

The prominent surgeon and scientist M. V. Skliphosovsky (1836 – 1904) was born in Moldova and spent his childhood in Odesa. After successful graduating from University he worked hard for the degree and became a professor of the Medical Academy in Petersburg. He was one of the organizers of surgical school in Russia. M.V. Skliphosovsky liked Ukraine and often visited Odesa and other Ukrainian towns. In 1871 he moved to Poltava and worked as a physician at the regional hospital. It should be noted that he took care about poor people. He treated them free of charge and tried to create favourable conditions in the hospital. A new school was built for poor children on his initiative and his daughter was a teacher there.

Text 5. Modern Medicine

Medicine in the 20th century received its impetus from Gerhard Domagk who discovered the first antibiotic, sulfanilamide, and the groundbreaking advancements in the use of penicillin. Further progress has been characterized by the rise of chemotherapy, especially the use of new antibiotics; increased understanding of the mechanisms of the immune system and the increased prophylactic use of vaccination; utilization of knowledge of the endocrine system to treat diseases resulting from hormone imbalance, such as the use of insulin to treat diabetes; and increased understanding of nutrition and the role of vitamins in health. Much medical research is now directed toward such problems as cancer, heart transplantation, AIDS, reemerging infectious diseases such as tuberculosis and dengue fever, and organ diseases.

Text 6. English Universities and Colleges

The oldest universities in Great Britain are Oxford and Cambridge. Many universities are fairly new. Modem English universities are in large cities, such as London, Leeds, Manchester, Birmingham and others. London University is the biggest of the modem English universities. In many ways the London University has departed from the traditions of Oxford and Cambridge. It consists of various colleges and other institutions. It has medical schools too.

A university usually has both faculties and departments. The most common faculties are medicine, law, arts, science and theology. There are various departments, such as engineering, economics, commerce, agriculture, music, etc.

The course of studies at a university lasts six years. The curriculum is wide. All universities admit men and women but the share of men is 75 per cent. Each faculty is headed by one or more professors. A staff of lecturers and tutors (teachers) help them. Professors and lecturers give lectures to large numbers of students, and tutors teach smaller groups.

Colleges provide specialized training. There are medical, teachers', technical and other colleges at a university. The course of studies at a college is only three years. At medical colleges students study various subjects, learn to treat patients and have practical work at hospitals. After graduating from a college they are given a certificate. Students pay for taking exams, for attending lectures, for taking books from the library. A student being a great success in study may take a degree of Bachelor of Arts or of Science.

Text 7. Haisyn Medical College

Soon our Medical College will celebrate its 80th anniversary. Our College was founded in 1928 and it was a medical school for Jews.

The students paid money for their studying during the first year. The first director of the school was N. A. Polyakman. He made a great contribution to the development of the medical school. The first students graduated in 1931. Before the Great Patriotic War the College trained about one thousand specialists who took an active part in that War.

After the War our school began to train nurses, medical assistants and obstetricians. Today more than 600 students study at the nursing, obstetric and medical assistant departments. They listen to lectures and attend practical classes. We have well-equipped classes for studying general and specialized medical subjects. Well-trained teachers and doctors teach students to be good specialists in their future profession.

Text 8. Composition and Formation of Blood

The primary function of blood is to maintain a constant environment for the other living tissues of the body. Blood transports nutrients, gases, and wastes to and from the cells of the body. Nutrients from food, digested in the stomach and small intestine, pass into the bloodstream through the lining cells of the small intestine. Blood then carries these nutrients to all body cells. Oxygen enters the body through the air sacs of the lungs. Red blood cells then transport the oxygen to cells throughout the body. Blood also helps remove the waste products released by cells. It carries gaseous waste (such as carbon dioxide) to the lungs to be exhaled. It carries chemical waste, such as urea, to the kidneys to be excreted in the urine. Blood transports chemical messengers called hormones from their sites of secretion in glands, such as the thyroid or pituitary, to distant sites where they regulate growth, reproduction, and energy production. Finally, blood contains proteins, white blood cells and antibodies that fight infection, and platelets (thrombocytes) and other proteins that help the blood to clot.

Composition and Formation of Blood

Blood is composed of **cells** (45% of blood volume), or formed elements, suspended in a clear, straw-colored liquid called **plasma** (55% of blood volume). The cells are **erythrocytes** (red blood cells or RBCs), **leukocytes** (white blood cells or WBCs), and platelets or thrombocytes (clotting cells). Plasma is a solution of water, proteins, sugar, salts, hormones, lipids, and vitamins.

A Drop of Blood

A small drop of blood normally contains approximately 4-6 million RBCs, 7-10 thousand WBC, 150-450 thousand platelets.

Cells

Beginning at birth, all blood cells originate in the marrow cavity of bones. Both the red blood cells that carry oxygen and the white blood cells that fight infection arise from the same blood-forming or **hematopoietic stem cells.** Under the influence of proteins in the blood and bone marrow, stem cells change their size and shape to become specialized, or **differentiated.** In this process, the cells change in size from large (immature cells) to small (mature forms), and the cell nucleus shrinks (in red cells, the nucleus actually disappears).

Erythrocytes

As a red blood cell matures (from erythroblast to erythrocyte), it loses its nucleus and assumes the shape of a biconcave disk. This shape (a depressed or hollow surface on each side of the cell, resembling a cough drop with a thin central portion) allows for a large surface area so that absorption and release of gases (oxygen and carbon dioxide) can take place.

Red cells contain the unique protein **hemoglobin,** composed of **heme** (iron-containing pigment) and **globin** (protein). Hemoglobin enables the erythrocyte to carry oxygen. The combination of oxygen and hemoglobin (oxyhemoglobin) produces the bright red color of blood.

Erythrocytes originate in the bone marrow. The hormone called **erythropoietin** (secreted by the kidneys) stimulates their production (**-poiesis** means formation). Erythrocytes live and fulfill their role of transporting gases for about 120 days in the bloodstream. After this time, **macrophages** (in the spleen, liver, and bone marrow) destroy the worn-out erythrocytes. From 2 million to 10 million red cells are destroyed each second, but because they are constantly replaced, the number of circulating cells remains constant at 4 million to 6 million per microliter (μL) of blood. Macrophages break down erythrocytes and hemoglobin into heme and globin (protein) portions. The heme releases iron and decomposes into a yellow-orange pigment called **bilirubin.** The iron in hemoglobin is used again to form new red cells or is stored in the spleen, liver, or bone marrow. Bilirubin is excreted into bile by the liver, and from bile it enters the

small intestine via the common bile duct. Finally it is excreted in the stool, where its color changes to brown.

Leukocytes

White blood cells (7000 to 10,000 cells per microliter of blood) are less numerous than erythrocytes, but there are five different types of mature leukocytes. These are three polymorphonuclear granulocytes: eosinophil, basophil, and neutrophil; and two mononuclear leukocytes: lymphocyte and monocyte.

The **granulocytes,** or **polymorphonuclear leukocytes (PMNs),** are the most numerous (about 60%). The three granulocytic leukocytes end with the suffix -phil (meaning attraction to). This reflects their affinity for various dyes. **Eosinophils** contain granules that stain with eosin, a red acidic dye. These cells increase in allergic responses and engulf substances that trigger the allergies. **Basophils** contain granules that stain dark blue with a basic (alkaline) dye. These granules contain heparin (an anticlotting substance) and histamine (a chemical released in allergic responses). **Neutrophils** contain granules that are neutral; they do not stain intensely and show only a pale color. Neutrophils are **phagocytes** (**phag/o** means to eat or swallow) that accumulate at sites of infection, where they ingest and destroy bacteria.

Specific proteins called **colony-stimulating factors** (CSFs) promote the growth of granulocytes in bone marrow. **G-CSF** (granulocyte CSF) and **GM-CSF** (granulocyte-macrophage CSF) are given to cancer patients to restore granulocyte production. **Erythropoietin,** like CSFs, can be produced by recombinant DNA techniques. It stimulates red blood cell production (erythropoiesis). Normally erythropoietin is made by the kidney. Thus patients with kidney failure can become anemic and are often treated with EPO to stimulate red blood cell production.

Although all granulocytes are **polymorphonuclear** (they have multilobed nuclei), the term **polymorphonuclear granulocytes ("polys")** most often refers to neutrophils, which are the most numerous of the granulocytes.

Mononuclear (containing one large nucleus) **leukocytes** do not have large numbers of granules in their cytoplasm, but they may have a few granules. These are **lymphocytes** and **monocytes**. Lymphocytes are made in bone marrow and lymph

nodes and circulate both in the bloodstream and in the parallel circulating system, the lymphatic system.

Lymphocytes play an important role in the **immune response** that protects the body against infection. They can directly attack foreign matter and, in addition, make **antibodies** that neutralize and can lead to the destruction of foreign **antigens** (bacteria and viruses). **Monocytes** are phagocytic cells that also fight disease. As **macrophages**, they move from the bloodstream into tissues and dispose of dead and dying cells and other tissue debris by phagocytosis.

Platelets (Thrombocytes)

Platelets, actually blood cell fragments, are formed in bone marrow from giant cells with multilobed nuclei called **megakaryocytes.** The main function of platelets is to help blood to clot. Specific terms related to blood clotting are discussed later in this chapter.

Plasma

Plasma, the liquid part of the blood, consists of water, dissolved proteins, nutrients, wastes, salts, hormones, lipids, and vitamins. The four major plasma proteins are **albumin, globulins, fibrinogen,** and **prothrombin** (the last two are clotting proteins).

Albumin maintains the proper proportion (and concentration) of water in the blood. Because albumin cannot pass easily through capillary walls, it remains in the blood and carries smaller molecules bound to its surface. It attracts water from the tissues back into the bloodstream and thus opposes the water's tendency to leave the blood and leak out into tissue spaces. **Edema** (swelling) results when too much fluid from blood “leaks” out into tissues. This happens in a mild form when a person ingests too much salt (water is retained in the blood and seeps out into tissues) and in a severe form when a person is burned in a fire. In this situation, albumin escapes from capillaries as a result of the burn injury. Then water cannot be held in the blood; it escapes through the skin, and blood volume drops.

Globulins are another component of blood and one of the plasma proteins. There are alpha, beta, and gamma globulins. The gamma globulins are **immunoglobulins,**

which are antibodies that bind to and sometimes destroy antigens (foreign substances). Examples of immunoglobulin antibodies are **IgG** (found in high concentration in plasma) and **IgA** (found in breast milk, saliva, tears, and respiratory mucus). Other immunoglobulins are **IgM, IgD,** and **IgE.** Immunoglobulins are separated from other plasma proteins by **electrophoresis.** In this process, an electrical current passes through a solution of plasma. The different proteins in plasma separate based mainly on their size and electric charge.

Plasmapheresis (-**apheresis** means removal) is the process of separating plasma from cells. In plasmapheresis, the entire blood sample is spun in a centrifuge machine. Because blood cells are larger and heavier, they move to the bottom of the sample, leaving the plasma on top.

Text 9. Blood Types

Transfusions of whole blood (cells and plasma) are used to replace blood lost after injury, during surgery, or in severe shock. A patient who is severely anemic and needs only red blood cells will receive a transfusion of **packed red cells** (whole blood with most of the plasma removed). Human blood falls into four main types: A, B, AB, and O. These types are based on the antigens on red blood cells and the antibodies found in each person's serum.

BLOOD TYPES

TYPE	PERCENTAGE IN POPULATION	RED CELL ANTIGENS	SERUM ANTIBODIES
A	41	A	Yes (anti-B)
B	10	B	Yes (anti-A)
AB	4	A and B	No (anti-A or anti-B)
O	45	No A and B	Yes (anti-A and anti-B)

There are harmful effects of transfusing blood from a donor of one blood type into a recipient who has blood of another blood type. Therefore, before blood is transfused, both the blood donor and the blood recipient are tested, to make sure that the transfused blood will be compatible with the recipient's blood type. During transfusion, if blood is not compatible, then **hemolysis** (breakdown of red blood cells) occurs. This may be followed by excessive clotting in blood vessels (**disseminated intravascular coagulation,** or **DIC**), which is a life-threatening condition. Besides A and B antigens, many other antigens are located on the surface of red blood cells. One of these is called the **Rh factor** (named because it was first found in the blood of a rhesus monkey). The term Rh positive (Rh+) refers to a person who is born with the Rh antigen on his or her red blood cells. An Rh negative (Rh−) person does not have the Rh antigen.

In clinical practice, blood types are named to indicate both Rh and ABO antigen status. If a woman has an A+ (A positive) blood type, for example, this means that she was born with both A antigen and Rh antigen on her red blood cells.

If a man has a B− (B negative) blood type, this means he was born with the B antigen on his red blood cells but not Rh antigen.

Why is Type O the "Universal Donor" Blood Type?

Type O blood does not contain A or B red cell antigens and therefore will not react with antibodies in any recipient's bloodstream. Anti-A and anti-B antibodies present in type O blood become diluted in the recipient's bloodstream and do not cause an adverse reaction.

Text 10. Blood Clotting

Blood clotting, or **coagulation,** is a complicated process involving many different substances and chemical reactions. The final result (usually taking less than 15 minutes) is the formation of a **fibrin clot** from the plasma protein **fibrinogen.** The suffix -gen means giving rise to. Platelets are important in beginning the process following injury to tissues or blood vessels. The platelets become sticky and collect, or aggregate, at the site of injury. Then, in combination with tissue and protein clotting factors, plus calcium, vitamin K, prothrombin, and thrombin, fibrinogen is converted to fibrin to form a clot. One of the important clotting factors is factor VIII.

It is missing in some people who are born with hemophilia. Other hemophiliacs are missing factor IX.

The fibrin threads form the clot by trapping red blood cells. Then the clot retracts into a tight ball, leaving behind a clear fluid called **serum.** Serum is related to plasma. It is plasma after the clotting factors have been removed.

Normally, clots (thrombi) do not form in blood vessels unless the vessel is damaged or the flow of blood is impeded. **Anticoagulant substances** in the blood inhibit blood clotting, so clots do not form. **Heparin,** produced by tissue cells (especially in the liver), is an example of an anticoagulant. Other drugs such as **warfarin (Coumadin)** are given to patients with thromboembolic diseases to prevent the formation of clots. **Direct oral anticoagulants (DOACs)** work by inhibiting blood clotting factors such as thrombin.

Text 11. What is Pharmacy?

Pharmacy is the health profession that links the health sciences with the chemical sciences. The scope of pharmacy practice includes more traditional roles such as compounding and dispensing medications, and it also includes more modern services related to health care, including clinical services, reviewing medications for safety and efficacy, and providing drug information. Pharmacists, therefore, are the experts on drug therapy and are the primary health professionals who optimize medication use to provide patients with positive health outcomes.

The word pharmacy is derived from its root word pharma which was a term used since the 15th–17th centuries. However, the original Greek roots from "Pharmakos" imply sorcery or even poison. In addition to pharma responsibilities, the pharma offered general medical advice and a range of services that are now performed solely by other specialist practitioners, such as surgery and midwifery. The pharma often operated through a retail shop which, in addition to ingredients for medicines, sold tobacco and patent medicines. The pharmas also used many other herbs not listed. The Greek word Pharmakeia derives from Greek: φάρμακον (pharmakon), meaning "drug" or "medicine".

In its investigation of herbal and chemical ingredients, the work of the pharma may be regarded as a precursor of the modern sciences of chemistry and pharmacology, prior to the formulation of the scientific method.

The field of pharmacy can generally be divided into three main disciplines:

Pharmaceutics that concerns on how to convert medication and drugs to suitable drug dosage forms;

Pharmaceutical Sciences including pharmaceutical and medicinal chemistry, pharmacognosy, pharmacy technology, pharmacy management and economics and pharmacology;

Pharmacy practice that concerns dispensing medication correctly. In the late 20th century, this field has developed into hospital pharmacy and clinical pharmacy. All of these fields are concentrated on optimizing patient care.

The boundaries between these disciplines and with other sciences, such as biochemistry, are not always clear-cut; and often, collaborative teams from various disciplines research together.

Text 12. History of Pharmacy.

The history of pharmacy as an independent science is relatively young. The origins of pharmacy back to the first third of the nineteenth century. The earliest known compilation of medicinal substances was an Indian Ayurvedic treatise [aɪər´veɪdə ´tri:tɪz] (6th century BC). However, the earliest text as preserved dates to the 3rd or 4th century AD. India has a great history of medicine and patient care.

Ancient Egyptian pharmacological knowledge was recorded in various papyri [pə´paɪrai] such as the Ebers Papyrus of 1550 BC, and the Edwin Smith Papyrus of the 16th century BC. In Ancient Greece there was a group of experts in medicinal plants. Probably the most important representative was Diocles of Carystus (4th century BC). He is considered to be the source for all Greek pharmacotherapeutic treatises between the time of Theophrastus and Dioscorides. The Latin translation De Materia Medica (Concerning medical substances) was used as a basis for many medieval texts, and was built upon by many middle eastern scientists during the Islamic Golden Age.

The advances made in the Middle East in botany and chemistry led medicine in medieval Islam substantially to develop pharmacology. Muhammad ibn Zakarīya Rāzi (Rhazes) (865-915), for instance, acted to promote the medical uses of chemical compounds. Al-Biruni (973-1050) wrote one of the most valuable Islamic works on pharmacology entitled Kitab al-Saydalah (The Book of Drugs), where he gave detailed knowledge of the properties of drugs and outlined the role of pharmacy and the functions and duties of the pharmacist. Ibn Sina (Avicenna), too, described no less than 700 preparations, their properties, mode of action and their indications.

In Europe pharmacy-like shops began to appear during the 12th century. In 1240 emperor Frederic II issued a decree by which the physician's and the apothecary's [əˊpɔθikəri] professions were separated. The first pharmacy in Europe (still working) was opened in 1241 in Trier, Germany. In Europe there are old pharmacies (opened in 1317) still operating in Dubrovnik, Croatia and one in the Town Hall Square of Tallinn, Estonia dating from at least 1422. The oldest is claimed to be set up in 1221 in the Church of Santa Maria Novella in Florence, Italy, which now houses a perfume museum. The medieval Esteve Pharmacy, located in Llívia, a Catalan enclave, is also now a museum dating back to the 15th century, keeping old prescription books and antique drugs.

The earliest drugstores date to the Middle Ages. The first known drugstore was opened by Arabian pharmacists in Baghdad in 754, and many more soon began operating throughout the medieval Islamic world and eventually medieval Europe. By the 19th century, many of the drugstores in Europe and North America had eventually developed into larger pharmaceutical companies.

Most of today's major pharmaceutical companies were founded in the late 19th and early 20th centuries. Key discoveries of the 1920s and 1930s, such as insulin and penicillin, became mass-manufactured and distributed. Switzerland, Germany and Italy had particularly strong industries, with the UK, US, Belgium and the Netherlands following suit.

Text 13. Medication Compounding

The art of preparing medications dates back to the origins of pharmacy. At pharmacies, they still practice the time proven art of compounding using modern variations of the "mortar and pestle" to prepare unique and individualized medications. Working with doctors, compounding allows pharmacists to customize the strength and dosage form of a medication according to individual needs. This may include making lozenges or preparing a drug that is no longer commercially available or it may involve changing a medication from a pill form into a penetrating skin cream, or adding flavors, or preparing a dye-free or preservative-free medication. The possibilities are endless. Pharmacists can formulate and prepare just about any kind of medicine specifically designed just for you. Compounding services can enhance virtually any area of medicine including natural hormone replacement therapy, children's dosage forms and flavors, capsule and suppository preparations, etc.

Text 14. Drug Interactions

A drug interaction is a situation in which a substance (usually another drug) affects the activity of a drug when both are administered together. This action can be synergistic (when the drug's effect is increased) or antagonistic (when the drug's effect is decreased) or a new effect can be produced that neither produces on its own. Typically, interactions between drugs come to mind (drug-drug interaction). However, interactions may also exist between drugs and foods (drug-food interactions), as well as drugs and medicinal plants or herbs (drug-plant interactions). People taking antidepressant drugs such as monoamine oxidase inhibitors should not take food containing tyramine as hypertensive crisis may occur (an example of a drug-food interaction). These interactions may occur out of accidental misuse or due to lack of knowledge about the active ingredients involved in the relevant substances.

It is therefore easy to see the importance of these pharmacological interactions in the practice of medicine. If a patient is taking two drugs and one of them increases the effect of the other it is possible that an overdose may occur. The interaction of the two drugs may also increase the risk that side effects will occur. On the other hand, if the

action of a drug is reduced it may cease to have any therapeutic use because of under dosage.

The pharmaceutical interactions that are of special interest to the practice of medicine are primarily those that have negative effects for an organism. The risk that a pharmacological interaction will appear increases as a function of the number of drugs administered to a patient at the same time.

It is also possible for interactions to occur outside an organism before administration of the drugs has taken place. This can occur when two drugs are mixed, for example, in a saline solution prior to intravenous injection.

Drug interactions may be the result of various processes. These processes may include alterations in the pharmacokinetics of the drug, such as alterations in the absorption, distribution, metabolism, and excretion (ADME) of a drug. Alternatively, drug interactions may be the result of the pharmacodynamic properties of the drug, e.g. the co-administration of a receptor antagonist and an agonist for the same receptor.

Therapeutic benefits of a drug on the market far outweighs it risks. All drugs are likely to have some side effects – unwanted action of a drug, e.g. drowsiness from an antihistamine given to relieve allergic symptoms, or acceleration of the heart by a drug given for asthma. The term is not usually applied to the toxic effects of an overdose, but to an effect of a standard therapeutic dose.

A side effect is usually regarded as an undesirable secondary effect which occurs in addition to the desired therapeutic effect of a drug or medication. Side effects may vary for each individual depending on the person's disease state, age, weight, gender, ethnicity and general health.

Pharmaceutical products save lives every day. Manufacturers of these important drugs spend many millions of dollars over many years to bring a product to the market. At the beginning of the process that ends with a new pharmaceutical product is the research into a specific ailment. The researchers investigate the specific disorder to understand all aspects and perform experiments to investigate possible methods of controlling it. Depending on the results of laboratory experiments, some of these will be taken into the development stage. After the laboratory experiments produced

favorable results, the product is then moved to the development stage. The product will undergo a four phase clinic trial, where each stage of the trial is designed to answer a separate research question. To get approval to manufacture and sell a new pharmaceutical product to the public, a company must provide the FDA (Food and Drug Administration) with proof of the quality, efficacy, and safety of the product. In the European Union, each member country has its own regulatory agency.

Text 15. Drug Toxicity

In the context of pharmacology, toxicity occurs when a person has accumulated too much of a drug in his bloodstream, leading to adverse effects within the body. Drug toxicity is the critical or lethal reaction to an erroneous dosage of a medication. It may occur due to human error or intentional overdose in the case of suicide or homicide. The effects of the medication are more pronounced at toxic levels, and side effects may be severe. The reasons for toxicity vary depending on the mixture of drugs. Toxicity may result when the dose is too high, or it may result when the liver or kidneys are unable to remove the drug from the bloodstream. Many commonly prescribed medications can accumulate in the bloodstream and result in toxicity. Symptoms of drug toxicity depends on the drug taken. Treatment for drug toxicity also depends on the drug taken and the blood level of the drug.

All drugs have both primary intended effects and secondary unintended effects, the latter known as side effects or adverse effects. Although side effects can be neutral or even beneficial, side effects are typically undesirable. Adverse effects can range in severity from nuisance to life threatening. These effects make many patients unwilling to take drugs on a regular basis, and this lack of compliance represents a major practical limitation of pharmacotherapy.

Drug toxicity, also called adverse drug reaction (ADR) or adverse drug event (ADE), is defined as the "manifestations of the adverse effects of drugs administered therapeutically or in the course of diagnostic techniques. It does not include accidental or intentional poisoning..." The meaning of this expression differs from the meaning of "side effect", as this last expression might also imply that the effects can be beneficial.

Text 16. Pharmacy Technicians

A pharmacy technician, also sometimes known as a pharmaceutical technician, is a health care worker who performs pharmacy related functions, generally working under the direct supervision of a licensed pharmacist or other health professional. Pharmacy technicians work in a variety of locations, usually in community and hospital pharmacies but also sometimes in pharmaceutical manufacturers, third-party insurance companies, computer software companies. Job duties include dispensing prescription drugs and other medical devices to patients and instructing on their use. They may also perform administrative duties in pharmaceutical practice, such as reviewing prescription requests with doctor's offices and insurance companies to ensure correct medications are provided and payment is received. In recent times, they also speak directly with the patients on the phone to aid in the awareness of taking medications on time.

In many countries, both developed and developing, the relative importance of pharmacy technicians within the pharmacy workforce has been amplified in recent years, largely as a reaction to pharmacist shortages, resulting in an increase in their numbers and responsibilities. Practical training, such as completing an internship in a pharmacy, is also often required as part of training for employment as a pharmacy technician.

Text 17. Pharmacist Code of Ethics

Pharmacists are health professionals who assist individuals in making the best use of medications. This Code, prepared and supported by pharmacists, is intended to state publicly the principles that form the fundamental basis of the roles and responsibilities of pharmacists. These principles, based on moral obligations and virtues, are established to guide pharmacists in relationships with patients, health professionals, and society.

I. A pharmacist respects the covenantal relationship between the patient and pharmacist.

II. A pharmacist promotes the good of every patient in a caring, compassionate, and confidential manner.

III. A pharmacist respects the autonomy and dignity of each patient.

IV. A pharmacist acts with honesty and integrity in professional relationships.

V. A pharmacist maintains professional competence.

VI. A pharmacist respects the values and abilities of colleagues and other health professionals.

VII. A pharmacist serves individual, community, and societal needs.

VIII. A pharmacist seeks justice in the distribution of health resources.

Oath of a Pharmacist

At this time, I vow to devote my professional life to the service of all humankind through the profession of pharmacy.

I will consider the welfare of humanity and relief of human suffering my primary concerns.

I will apply my knowledge, experience, and skills to the best of my ability to assure optimal drug therapy outcomes for the patients I serve.

I will keep abreast of developments and maintain professional competency in my profession of pharmacy. I will maintain the highest principles of moral, ethical and legal conduct.

I will embrace and advocate change in the profession of pharmacy that improves patient care.

I take these vows voluntarily with the full realization of the responsibility with which I am entrusted by the public.

Types of pharmacies:

Community pharmacies usually consist of a retail storefront with a dispensary where medications are stored and dispensed.

Pharmacies within hospitals differ considerably from community pharmacies. Some pharmacists in hospital pharmacies may have more complex clinical medication management issues whereas pharmacists in community pharmacies often have more complex business and customer relations issues. Hospital pharmacies usually stock a larger range of medications, including more specialized medications.

Clinical pharmacy is the branch of Pharmacy where pharmacists provide patient care that optimizes the use of medication and promotes health, wellness, and disease prevention. Clinical pharmacists care for patients in all health care settings but the clinical pharmacy movement initially began inside hospitals and clinics. Clinical pharmacists often collaborate with physicians and other healthcare professionals.

Ambulatory care pharmacy is based primarily on pharmacotherapy services that a pharmacist provides in a clinic. Pharmacists in this setting often do not dispense drugs, but rather see patients in office visits to manage chronic disease states.

Consultant pharmacy practice focuses more on medication regimen review (i.e. "cognitive services") than on actual dispensing of drugs. Consultant pharmacists most typically work in nursing homes.

Since about the year 2000, a growing number of Internet pharmacies have been established worldwide. Many of these pharmacies are similar to community pharmacies, and in fact, many of them are actually operated by brick-and-mortar community pharmacies that serve consumers online and those that walk in their door. The primary difference is the method by which the medications are requested and received.

Text 18. Atherosclerosis

Healthy arteries are like healthy muscles. They are strong, flexible, and elastic. Atherosclerosis is the condition in which fatty deposits accumulate in and under the lining of the artery walls. The name comes from the Greek word ather, meaning "porridge", because the fatty deposits are soft and resemble porridge. Blood cells (platelets) often clump at microscopic sites of injury to the inner wall of the artery. At these sites, fat deposits also collect. Initially, the deposits are only streaks of fat-containing cells but, as they enlarge, they invade some of the deeper layers of the arterial walls, causing scarring and calcium deposits. Large accumulations called atheromas or plaques are the principal characteristic of atherosclerosis. The greatest danger from these deposits is the narrowing of the channel through which the blood flows. When this occurs, the tissues that the artery supplies will not receive their full

quota of blood. Pieces of the fatty deposits may be dislodged, travel with the blood flow, and finally obstruct an artery at some distant point.

Atherosclerosis may be discovered in the course of a routine physical examination. During examination of patient's neck, abdomen, or other parts of the body, the physician may hear a blowing sound if a narrowing of the lining of the arteries at one or more these points causes turbulence of the blood flow. The physician also will estimate the amount of blood flow by feeling for pulsations in the arteries at the wrists, legs, and feet. A decrease in pulsations is a reason to suspect partially obstructed blood flow. More elaborate tests of circulation using sound waves often help in establishing the presence and degree of decreased blood flow. Ultrasound scan of the abdomen often is used to identify a suspected aneurysm of the aorta in the abdomen. Another test for locating the sites of plaques that narrow blood vessels is arteriography. In many cases, the diagnosis is not suspected until the artery is completely obstructed and the person has experienced a stroke, heart attack, or arterial thrombosis. To some extent, the body can protect itself from narrowing of a particular artery by developing, with time, additional arterial connections that detour blood around the narrowed point. This is called collateral circulation. Although atherosclerosis occurs to some extent in all middle-aged and elderly people and even may occur in certain young people, some people appear more at risk because of high blood cholesterol levels. The best prevention and treatment of atherosclerosis is certain regimen, sound sleep, rest, and proper diet. Vitamins are widely used in the treatment of this disease. Other drugs administered in treating atherosclerosis are so-called lipotropic substances, which prevent fat from accumulating in the organism.

Text 19. Angina Pectoris

If you are having pain or pressure in the middle of your chest, left neck, left shoulder, or left arm, go immediately to the nearest hospital emergency department. Do not drive yourself. Call for emergency transport. Angina, or angina pectoris, is the medical term used to describe the temporary chest discomfort that occurs when the heart is not getting enough blood. The heart is a muscle (myocardium) and gets its blood supply from the coronary arteries. Blood carries the oxygen and nutrients the

heart muscle needs to keep pumping. When the heart does not get enough blood, it can no longer function at its full capacity. When physical exertion, strong emotions, extreme temperatures, or eating increase the demand on the heart, a person with angina feels temporary pain, pressure, fullness, or squeezing in the center of the chest or in the neck, shoulder, jaw, upper arm, or upper back. This is angina, especially if the discomfort is relieved by removing the stressor and/or taking sublingual (under the tongue) nitroglycerin. The discomfort of angina is temporary, meaning a few seconds or minutes, not lasting hours or all day. An episode of angina is not a heart attack. Having angina means you have an increased risk of having a heart attack. A heart attack is when the blood supply to part of the heart is cut off and that part of the muscle dies (infarction). Prolonged or unchecked angina can lead to a heart attack or increase the risk of having a heart rhythm abnormality. Either of those could lead to sudden death. Time is very important in angina. The more time the heart is deprived of adequate blood flow (ischemia), and thus oxygen, the more the heart muscle is at risk of heart attack or heart rhythm abnormalities. The longer the patient experiences chest pain from angina, the more the heart muscle is at risk of dying or malfunctioning. Not all chest pain is angina. Pain in the chest can come from a number of causes, which range from not serious to very serious. For example, chest pain can be caused by: acid reflux (gastroesophageal reflux disease), upper respiratory infection, asthma, or sore muscles and ligaments in the chest (chest wall pain). If chest pain is severe and/or recurrent, the patient should see a healthcare provider.

Text 20. Peptic ulcer

Peptic ulcers are holes or breaks in the inner lining of the esophagus, stomach, or duodenum. It has been determined that peptic ulcer generally occurs in the lower part of the stomach (gastric ulcer), in the initial portion of the duodenum (duodenal ulcer), and occasionally in the lower esophagus (esophageal). The signs and symptoms of the peptic ulcer are the following: burning, aching, or hunger discomfort in the upper abdomen or lower chest (that is relieved by milk or food); black stools; bloated feeling after meals; and nausea or vomiting. In emergency cases the person has clammy skin and fainting. The cause of ulcers is not fully known. Normally, the linings of the

esophagus, stomach, and duodenum are kept intact by a balance between the acid and stomach juices and the resistance of these linings to injury. When the balance breaks down, the result may be a peptic ulcer. Recent research has shown that many ulcers may be secondary to bacteria called Helicobacter pylori (H pylori).

Peptic ulcers are not uncommon in our society. It has been estimated that the age at diagnosis peaks between 30 and 50 for duodenal ulcers and between 60 and 70 for gastric ulcers. Frequently, ulcers recur within 1 year after healing, sometimes without symptoms. Some people may have an inherited disposition to ulcers. Peptic ulcers are 3 times more likely to occur in families of patients with duodenal ulcer than in the general population. And relatives of people with gastric ulcers have the very same kind of ulcer. The goals of treatment are to relieve symptoms, heal the ulcer, prevent relapse, and avoid complications. The vast majority of persons with peptic ulcer disease responds well to medication. The key to treatment is either decreasing the amount of acid present or strengthening the protective lining of the stomach or duodenum. The mainstay of treatment is a class of drugs that decrease the amount of acid produced in the stomach. These drugs are called H12 blockers. The usual course of therapy lasts approximately 6 weeks. Many people with ulcers harbor H pylori bacteria, which can be effectively treated with antibiotics. Twelve months after treatment, most people show no ulcer recurrence, while recurrence is more common after using standard ulcer medications. However, if the person has an ulcer that does not respond to medical treatment or the person has serious complications such as hemorrhage, obstruction, or perforation, he/she may be a candidate for surgery.

Text 21. Gastritis

"Gastritis" is a general term that means inflammation of the lining of the stomach. It can result from a number of causes, each of which may produce somewhat different symptoms, such as: upper abdominal discomfort, nausea and vomiting, and diarrhea. Gastritis can occur as a result of acid-induced damage to the lining of the stomach when no ulcer is present. Excessive smoking or alcohol consumption are known to produce mild gastritis or to aggravate existing gastritis symptoms. Gastritis also can be a side effect of a number of prescription drugs. Severe stress due to burns, trauma, surgery,

or shock may produce gastritis. Gastritis is also seen in some persons whose stomachs do not produce acid. In these cases, the lining of the stomach is atrophied. This condition may be associated with vitamin B12 deficiency and occurs in many older people. Even very healthy people may experience gastritis with some regularity. In most cases, the symptoms of gastritis are relatively mild and short-lived, pose no real danger, and have no lasting effect. Occasionally, gastritis may cause bleeding, but it is rarely severe. Antacids in liquid or tablet form are a suitable and common treatment of mild gastritis. If a person is troubled by excessive acid and antacids fail to provide relief, the physician may prescribe drugs such as cimetidine, ranitidine, or nizatidine, which decrease the amount of acid produced by the stomach. Medication to protect the lining of the stomach may be used.

Text 22. History of antibiotics

Although potent antibiotic compounds for treatment of human diseases caused by bacteria (such as tuberculosis, bubonic plague, or leprosy) were not isolated and identified until the twentieth century, the first known use of antibiotics was by the ancient Chinese over 2,500 years ago. Many other ancient cultures, including the ancient Egyptians and ancient Greeks already used molds and plants to treat infections, owing to the production of antibiotic substances by these organisms. At that time, however, the compounds having antibiotic activity and present in moulds or plants were unknown. The antibiotic properties of Penicillium sp. were first described in France by Ernest Duchesne in 1897. However, his work went by without much notice from the scientific community until Alexander Fleming's discovery of Penicillin. Modern research on antibiotic therapy began in Germany with the development of the narrow-spectrum antibiotic Salvarsan by Paul Ehrlich in 1909, for the first time allowing an efficient treatment of the widespread problem of Syphilis. The drug, which was also effective against other spirochaetal infections, is no longer in use in modern medicine. Antibiotics were further developed in Britain following the re-discovery of Penicillin in 1928 by Alexander Fleming. More than ten years later, Ernst Chain and Howard Florey became interested in his work, and came up with the purified form of penicillin. The term "antibiotic" was originally used to refer only to substances

extracted from a fungus or other microorganism, but has come to include also many synthetic and semi-synthetic drugs that have antibacterial effects.

Side Effects.

Possible side effects are varied, depend on the antibiotics used and the microbial organisms targeted. Adverse effects can range from fever and nausea to major allergic reactions including photodermatitis. One of the more common side effects is diarrhea, sometimes caused by the anaerobic bacterium Clostridium difficile, which results from the antibiotic disrupting the normal balance of the intestinal flora. Such overgrowth of pathogenic bacteria may be alleviated by ingesting probiotics during a course of antibiotics. An antibiotic-induced disruption of the population of the bacteria normally present as constituents of the normal vaginal flora may also occur, and may lead to overgrowth of yeast species of the genus Candida in the vulvo-vaginal area. Other side effects can result from interaction with other drugs, such as elevated risk of tendon damage from administration of a quinolone antibiotic with a systemic corticosteroid. It is a common assertion that some antibiotics can interfere with the efficiency of birth control pills. Although there remain few known cases of complication, the majority of antibiotics do not interfere with contraception, despite widespread misinformation to the contrary.

Medical English Vocabulary

Word, Part of Speech	Meaning	Example Sentence
Abnormal, adj	not normal for the human body	This amount of weight loss is abnormal for women your age.
ache, noun/verb	pain that won't go away	I can't sleep because my knees ache in the night.
acute. adj	quick to become severe/bad	We knew the baby was coming right away because the woman's labour pains were acute.
allergy noun allergic adj	a body's abnormal reaction to certain foods or environmental substances (e.g. causes a rash)	Your son is extremely allergic to peanuts.
ambulance, noun	emergency vehicle that rushes people to a hospital	We called the ambulance when Josh stopped breathing.
amnesia. noun	a condition that causes people to lose their memory	I can't remember the accident because I had amnesia.
amputation, noun amputate, verb	permanent removal of a limb	We had to amputate his leg because the infection spread so quickly.
anaemia, noun anaemic, adj	occurs when the body doesn't have enough red blood cells	I have low energy because I am anaemic.
antibiotics, noun	medication that kills bacteria and cures infections	My throat infection went away

		after I started the antibiotics.
anti-depressant, noun	medication that helps relieve anxiety and sadness	The anti-depressants helped me get on with life after Lucy died.
appointment, noun	a scheduled meeting with a medical professional	I've made you an appointment with a specialist in three week's time.
arthritis, noun	a disease that causes the joints to become swollen and crippled	My grandmother can't knit anymore because the arthritis in her hands is so bad.
asthma (attack), noun	a condition that causes a blockage of the airway and makes it difficult for a person to breathe	I carry an inhaler when I run because I have asthma.
bacteria, noun	a disease-causing organism	To prevent the spread of bacteria it is important that nurses wash their hands often.
bedsore, noun	wounds that develop on a patient's body from lying in one place for too long	If you don't get up and take a walk, you will develop painful bedsores.
benign, adj	not harmful (not cancerous)	We're hoping that the tests will show that the lump in your breast is benign.
biopsy, noun	removal of human tissue in order to conduct certain medical tests	The biopsy ruled out a number of illnesses.

blood count, noun	the amount of red and white blood cells a person has	You will be happy to know that your blood count is almost back to normal.
blood donor, noun	a person who gives blood to a blood bank or other person	Blood donors have to answer questions about their medical history.
blood pressure, noun	the rate at which blood flows through the body (high/low)	High blood pressure puts you at risk of having a heart attack.
brace, noun	a device that holds injured body parts in place	You will probably always have to wear a brace on your ankle when you jog.
breech, adj	position of an unborn baby in which the feet are down and the head is up	We thought it was going to be a breech birth, but the baby turned himself around.
broken, adj	a bone that is divided in two or more pieces as a result of an injury	We thought it was just a sprain, but it turned out his leg was broken.
bruise, noun bruised, adj	injured body tissue that is visible underneath the skin	The woman was badly bruised when she came into the emergency room.
Caesarean section, C-section, noun	procedure that involves removing a baby from its mother through an incision in the woman's lower abdomen	The baby was so large that we had to perform a Caesarean section.

cancer, noun	disease caused by the uncontrollable growth of cells	There are many different options when it comes to treating cancer.
cardiopulmonary resuscitation (CPR), noun	restoring a person's breath and circulation	You saved your brother's life by performing CPR
cast, noun	a hard bandage that is wrapped around a broken bone to keep it in place	My leg was in a cast for graduation.
chapel, chapeline, noun	a place where loved ones can go to pray for a patient's recovery; a priest who visits patients in the hospital	If you want a place to pray, the chapel is on the third floor.
chemotherapy, noun	type of treatment used on cancer patients	My mother has already had three rounds of chemotherapy.
chickenpox, noun	a virus commonly contracted by children, characterized by itchy spots all over the body	It is best to get chickenpox as a child so that you don't get it worse as an adult.
coroner, noun	a person who determines the cause of death after a person dies	We only call the coroner if we think a death is suspicious.
critical condition, noun	requiring immediate and constant medical attention	You can't see her right now; she's in critical condition.

crutches, noun	objects that people with injured legs or feet use to help them walk	I'd rather hop on one foot than use crutches.
cyst, noun	A sac in the body-tissue filled with fluid (sometimes diseased)	We're going to remove the cysts just to be on the safe side.
deaf, adj	unable to hear	The accident left the patient both deaf and blind.
deficiency, noun	a lack of something necessary for one's health	The tests show that you have an iron deficiency.
dehydrated, adj	in need of water	It is easy for the elderly to become dehydrated in this heat.
dementia, noun	loss of mental capacity	It is hard to watch a loved one suffering with dementia.
diabetes, noun	type of disease typically involving insulin deficiency	People with diabetes have to constantly check their blood sugar levels.
diagnosis, noun	medical explanation of an illness or condition	The doctor would prefer to share the diagnosis with the patient himself.
discomfort, noun	experiencing pain	This pain medication should relieve some of your discomfort.

disease, noun	a medical disorder that is harmful to a person's health	I understand that this disease runs in your family.
dislocated, adj	when a bone is temporarily separated from its joint	You will have to wear a sling because of your dislocated shoulder.
emergency, noun	a medical problem that needs immediate attention	It is important that children know which number to dial in case of an emergency.
ER (emergency room), noun	the hospital room used for treating patients with immediate and life-threatening injuries	The child was rushed into the ER after he had a severe allergic reaction to a bee sting.
external, adj	on the outside	This cream is for external use only. Do not get it near your ears, eyes, or mouth.
false, noun, adj	a test that incorrectly comes back negative	We had two false negative pregnancy tests, so we didn't know we were having a baby.
family history, noun	medical background of a person's family members	The doctor was concerned about my family history of skin cancer.

fatal, adj	causing death	The doctor made a fatal error when he wrote the wrong prescription.
fever, noun feverish , adj	higher than normal body temperature	He is very feverish, and his temperature is near danger point.
flu (influenza), noun	many types of respiratory or intestinal infections passed on through a virus	People who have the flu should not visit hospital patients.
fracture, noun fractured, adj	broken or cracked bone	Your wrist is fractured and needs a cast.
germ, noun	a micro-organism, especially one that causes disease	Flowers are not allowed in the ward to avoid the risk of germs being brought in.
genetic, adj	a medical condition or physical feature that is passed on in the family	The disease is part genetic and part environmental.
growth, noun	a ball of tissue that grows bigger than normal, either on or under the skin	That growth on your shoulder is starting to worry me.
heart attack, noun	instance in which blood stops pumping through the heart	People who smoke are at greater risk of having a heart attack.
HIV, noun	the virus that infects the human T-cells and leads to AIDS	HIV can be passed down from the mother to her fetus.

hives, noun	bumps that appear on the surface of the skin during an allergic reaction	I broke out in hives after I ate that potato casserole.
illness, noun ill, adj	general term for any condition that makes a person feel sick for a certain period of time	Her illness went away when she started eating better.
immune system, noun	the parts of the body that fight diseases, infections, and viruses	You can't have visitors because your immune system is low.
immunization, noun immunize, verb	an injection that protects against a specific disease	Babies are immunized three times in their first year.
incision, noun	cut in the body made during surgery	I had to have stitches to close the incision.
inconclusive, adj	unclear	We have to do more x-rays because the first ones were inconclusive.
infant, noun	young baby	The nurse will demonstrate how to bathe an infant.
infection, noun infected, adj	diseased area of the body (viral or bacterial)	The wound should be covered when you swim to prevent it from becoming infected.
inflamed, adj	appearance (red and swollen) of an injured body part	My right ankle was so inflamed it was twice the size of my left one.

injury, noun	damage to the body	Her injuries were minor; just a few cuts and bruises.
intensive care unit (ICU), noun	section of the hospital where patients get constant attention and doctors rely on specialized equipment	She will remain in the ICU until she can breathe on her own.
internal, adj	under the skin, inside the organs	The doctors will be monitoring her for any internal bleeding.
Itchy, adj	feeling discomfort on the skin's surface	If you are allergic to this medication your skin will get red and itchy.
IV, noun	a tube that pumps liquids and medication into a patient's body	The toddler was so dehydrated that the doctor decided to get him on an IV.
lab results, noun	tests that come back from a laboratory and help doctors make a diagnosis	The lab results have come in and you are free to go home.
lab (laboratory), noun	place where samples of blood/urine etc. are taken for testing	I'll take these samples down to the lab on my way out.
life support, noun	a machine that keeps patients alive by helping them breathe	The woman has severe brain damage and is currently on life support.
life-threatening, adj	when injuries and conditions are extremely serious	The victim was shot in two places but the bullet wounds are not life-threatening.

light-headed, adj	feeling of dizziness and being off-balance, caused by lack of oxygen in the brain	If you are feeling light-headed again, lie down and call me.
malignant, adj	expected to grow and get much worse (especially related to cancerous cells)	I'm afraid at least one of the tumours is malignant.
medical school (med. school), noun	place where someone trains to be a doctor	After eight years of medical school I can finally practice medicine.
newborn, noun	an infant that is less than three months old	You have to support her neck because she is still a newborn.
numb, adj	no feeling in a certain body part	The needle will make your lower body feel numb.
OR (operating room), noun	the place where major surgeries and operations take place	You must wear a face mask and gloves while you are in the OR.
operation, noun operate on, verb	a medical procedure that involves going inside a person's body in an attempt to fix a problem	The operation lasted seven hours, but it was successful.
pain, noun	strong discomfort in certain areas of the body	We gave your husband some medicine to relieve some of the pain.
pain killer, pain reliever, noun	type of medicine that takes away some or all of the discomfort of an illness or injury	You can take two pain killers every four hours.

paralyzed, adj	unable to move certain areas of the body	We thought her legs were paralyzed for life, but she is learning how to walk.
patient, noun	a person staying in a hospital or medical facility	The patients in Room 4 are not getting along.
pharmacist, noun	a person who fills a doctor's prescription and gives people advice about medication	Ask the pharmacist if there is a generic brand of this medication.
pharmacy, drugstore, noun	a place where people go to buy medication and other medical supplies	You should be able to buy a bandage at the pharmacy.
physician, noun	doctor	Ask your family physician to refer you to a specialist.
poison, noun poisonous, adj	a substance that is very dangerous if it enters the human body	The child was bitten by a poisonous snake.
prenatal, adj	of the time period leading up to giving birth	The woman was well prepared for labour because she took the prenatal classes.
prescription, noun prescribe, verb	the correct amount and type of medication needed to cure an illness or relieve symptoms	You will need to visit your doctor to get another prescription.
privacy, noun private, adj	being alone; personal (e.g. test results)	You will have to pay for a private hospital room if you don't want a room-mate.

radiation, noun	high energy X-rays that destroy cancer cells	If the radiation doesn't kill all of the abnormal cells, the cancer will come back.
residency resident, noun	part of a doctor's training that takes place in the hospital; a student working under a doctor	John is a resident under Dr Brown.
routine check-up, noun	a doctor's appointment to check a person's general health	I'd like to see you a year from now for a routine check-up.
scrubs, noun	plain uniform (usually green, white, or blue) worn by medical professionals	I have some extra scrubs in my locker.
scrub up, verb	carefully wash hands before and after seeing a patient	I have to scrub up and get ready for surgery.
second opinion, noun	input from a second doctor about an illness or symptom	I went to another doctor to get a second opinion about these headaches.
seizure, noun	sudden violent movements or unconsciousness caused by electrical signal malfunction in the brain	People who suffer from epilepsy are prone to seizures.
shock, noun	body not getting enough blood flow	The woman was in shock after being pulled from the river.
side effects, noun	other symptoms that might occur as a result of a certain medication or procedure	One of the side effects of antidepressants is a loss of appetite.

sore, adj	painful	I have a sore throat and a runny nose
spasm, noun	the uncontrollable tightening of a muscle	Ever since I injured my leg I've been having muscle spasms in my upper thigh.
specialist, noun	a doctor that is an expert in a certain kind of medicine	My family doctor is sending me to a specialist.
sprain, noun/verb	an injury (less serious than a break) to a joint (ankle, wrist, knee etc	I sprained my knee playing soccer.
stable condition, noun	a patient is stable if their medical condition is no longer changing rapidly	You can see your husband now; he is in a stable condition.
sting, noun/verb	sharp, temporary pain	It may sting when I insert the needle.
stress, noun stressed, adj	worry that causes muscles to tighten and blood pressure to rise	You need to take some time off work and relieve some of your stress.
swelling, noun swollen, adj	ligaments (parts that hold the joints together) growing bigger and rounder after an injury to a joint	I knew my ankle was sprained because it was so swollen.
symptoms, noun	pain or physical changes that occur because of an illness or disease	You have all of the symptoms of a diabetic.
temperature, noun	amount of heat measured in a body; higher than normal temperature	We brought Jesse to emergency because he was

		running a (high) temperature.
tender, adj	painful when touched or used	The incision was tender after the surgery.
test results, noun	medical information that helps doctors understand a patient's condition or body	The test results came back negative. You aren't pregnant.
therapy, noun	treatment aimed at improving a person's mental or physical condition	I was able to go back to work a few weeks after starting the therapy.
transplant, noun	moving of an organ from one human to another	The heart transplant saved your life.
ultrasound, noun	a test that examines the body's internal organs and processes using sound waves (often used during pregnancies)	The ultrasound shows that we are expecting a baby boy.
umbilical cord, noun	the lifeline from the mother to the fetus (when cut at birth this forms the belly button)	I had an emergency C-section because the umbilical cord was wrapped around the baby's neck.
unconscious, adj	alive, but appearing to be asleep and unaware of the surroundings	I hit my head on the steering wheel and was still unconscious when the ambulance arrived
urine sample, noun	a small amount of the body's liquid waste that is tested for different medical reasons	The urine sample tells us how

		much alcohol is in your blood.
vein, noun	the thin tubes that transport blood around the body and back to the heart	I'm just looking for the best vein in which to insert the needle.
virus, noun	a dangerous organism that causes the spread of minor and major diseases	The virus is contractable through the exchange of bodily fluids.
visiting hours, noun	time of day when friends and family are allowed to visit patients in hospital	I'm afraid you'll have to come back during visiting hours.
vomit, noun/verb	discharge of a person stomach contents through the mouth	The pregnant woman can't stop vomiting.
ward, noun	a section of a hospital or health facility where patients stay	I should warn you that we're entering the mental health ward.
wheelchair, noun	a chair on wheels used for transporting patients from place to place	If you get in the wheelchair I'll take you down to see the garden.
wound, noun wounded, adj	injury to body ("flesh wound" means not deep)	The wounded soldiers are being airlifted to the hospital.
X-ray, noun/verb	a photograph of a person's bones and organs	The technician took x-rays of my shoulder to make sure it wasn't broken.

SOURCES

1. Аврахова О. С. Ісаєва Л. Я. Англійська мова за професійним спрямуванням для студентів-медиків. Львів, 2013. 546 с.

2. Войткевич Н.І., Запоточна Л.І. English for Students of Pharmacy: підручник. Чернівці: Видавничий дім «Букрек», 2007. 232с.

3. Знаменська, О.О. Пісоцька, В.Г. Костенко. Підручник з англійської мови "English for Medical Specialists" для студентів вищих медичних навчальних закладів України III-IV рівня акредитації. (Частина I – II). https://docplayer.net/92865351-I-znamenska-o-pisotska-v-kostenko.html

4. Bahar Ajar. Basic Communication for Pharmacy Students: textbook. Penerbit: Fkip Universitas Muhammadiyah Tangerang. 76 p.

5. Barbara Ganson Cohen. Medical Terminology. Philadelphia : G.B. Lipincott Company, 1994.

6. Diaz-Gilbert Miriam. English for pharmacy Writing and Oral Communication. Lippincott Williams & Wilkins, Wolters Kluver business. Philadelphia, 2009. 411p.

7. English for the Pharmaceutical Industry / Michaela Buchler, Kathy Jaehnig, Gloria Matzig, Tanya Weindler. Oxford University Press, 2010. 96p.

8. Eric H. Glendinning, Beverly, A. S. Holmstrom. English in Medicine. Cambridge : University Press, 1998.

9. Eric H. Glendinning, Ron Howard. Professional English in Use. Medicine. Cambridge University Press, 2007. 175 p.

10. MacCarter Sam. Oxford English for Careers. Medicine 1, 2 : Oxford University Press, 2017. 143 p.

11. Sabliuk A. H., Levandovska L.V. English for Medical Students. Kyiv : AUS MEDICINE Publishing, 2018. 576 p.

12. Seal Bernard. Academic Encounters. Human Body. New York: Cambridge University Press. 220 p.

13. Virginia Evans, Jenny Dooley, Trang M. Tran, M.D. Career Paths. Medical. Newberry : Express Publishing, 2019. 75 p.

14. Znamenska I., Bieliaieva O. Medical English (Workbook). Vinniytsia : Nova Knyha, 2020. 167 p.