МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ХАРКІВСЬКИЙ НАЦІОНАЛЬНИЙ МЕДИЧНИЙ УРНІВЕРСИСТЕТ

Практикум з англійської мови для студентів-медиків

(частина І)

Харків 2009

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Затверджено Вченою Радою ХНМУ
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ПЕРЕДМОВА

Медична професія потребує навчання протягом усієї кар'єри, отже лікарі мають увесь час отримувати та засвоювати новітню медичну інформацію з багатьох джерел, частина яких видані іноземною мовою. Крім того, у сучасній медицині велике значення має міжнародне співробітництво, інтеграція зусиль фахівців різних країн у дослідженні різноманітних проблем охорони здоров'я та розробці новітніх методів діагностики, лікування, профілактики захворювань.

За різними оцінками, у світі існує 4-5 тис. мов, але більшість населення планети спілкується двадцятьма. Серед них англійська стоїть на другому місці за кількістю людей, які вважають її рідною (350 млн. осіб). Кількість населення, яке проживає на територіях, де англійська є офіційною чи мовою більшості, дорівнює 1400 млн. (за цим показником англійська мова виходить на перше місце). Крім того економічна та політична обстановка, яка склалася у світі після Другої світової війни, сприяла тому, що англійська мова набула статусу мови міжнародного спілкування.

Що стосується галузі медицини, можна навести такі факти: база даних медичних наукових публікацій MEDLINE (Національна медична бібліотека США) уміщує бібліографічний опис та реферати статей з більш ніж 4800 біомедичних журналів, які видаються у США та 70 інших країнах світу англійською мовою, але якщо врахувати вимоги якості, новизни, актуальності, оригінальності друкованих матеріалів, які висуваються до журналів, що прагнуть попасти до цієї бази даних, то стає зрозумілим, що дійсна кількість наукових публікацій англійською мовою значно вища.

Зі сказаного вище випливає, що володіння англійською мовою для професійних потреб стає невід'ємною професійною рисою сучасного медика.

Цей Практикум призначений для навчання студентів 1-2 курсів медичних факультетів професійного спілкування. При створенні цього посібника автори керувалися принципами комунікативного підходу до вивчення іноземних мов, засадами концепції мови для спеціальних потреб, а також принципом одночасного формування продуктивних і рецептивних навичок. Відбір жанрів текстів Практикуму та виділення комунікативних навичок, необхідних для опрацювання, проводилися на основі аналізу потреб студентів та практикуючих лікарів. Основними лінгводидактичними принципами створення цього практикуму були послідовність презентації мовного матеріалу, комунікативна спрямованість, одночасний розвиток рецептивних та продуктивних навичок, використання оригінальних текстів, розв'язання студентами творчих завдань, максимальне використання іноземної мови.

Основними завданнями Практикуму є розвиток навичок роботи з навчальною та довідковою медичною літературою, використовуючи усі види читання, обговорювати медичні проблеми, писати історії хвороби, спілкуватися з хворим та його рідними, а також з колегами. Практикум призначений для самостійної роботи студентів в аудиторії під керівництвом викладача, а також для самостійної позааудиторної роботи.

Практикум призначений для занять зі студентами, які володіють англійською мовою на рівні B1+ (вимога, яка висувається до випускників середніх шкіл Стандартами середньої освіти) та має на меті формування навичок на рівні B2.

Практикум складається з 34 розділів (units), змістовий матеріал яких викладений у тій ж послідовності, у якій медицина вивчається в медичних вищих навчальних закладах України: від доклінічної підготовки до клінічних дисциплін. За виключенням першого розділу, метою якого є знайомство з групою та оцінка рівня володіння англійською мовою, кожний розділ містить текст, присвячений тій чи іншій темі: розділ 2 – основи термінотворення у галузі медицини, розділи 3 - 14 – будова тіла людини в цілому та по системах, тексти розділів 15 - 16 містять інформації.. присвячену питанням мікробіології, розділу 17 – імунології, розділів 18, 19 – здорового способу життя та профілактики

захворювань, розділи 20 - 22 фармакології, 23 – 34 лікування окремих хвороб. Кожний розділ розрахований на 4-6 годин аудиторної роботи.

Тексти для читання були взяті з автентичної медичної та науково-популярної літератури з проблем медицини та адаптовані і скорочені з урахуванням рівня мовних і медичних знань студентів, а також потреб навчання. Їх структура та стилістичні особливості є типовими для текстів обраних жанрів.

Кожний розділ починається зі списку лексики, знання якої необхідно для розуміння тексту (Key words). Цю лексику студенти мають повторити чи вивчити самостійно до початку роботи над розділом. До самостійної роботи, яка виконується перед роботою з розділом, відносяться також тести з повторення граматики (Grammar revision). Хоча цей матеріал повинен бути засвоєний на етапі вивчення англійської мови у середній школі, може виникнути потреба більш детального опрацювання граматичного матеріалу. При необхідності повторення граматики викладач може обрати та рекомендувати студентам будь-який посібник необхідного рівня, а також додати граматичні вправи та тести для роботи перед опрацюванням матеріалу розділу. При необхідності викладач може додати вправи з активізації лексики.

Вправи до текстів передбачають, що їх читання проводиться у декілька етапів – від ознайомлювального й пошукового до читання з повним охопленням змісту. Тексти супроводжуються вправами, які контролюють розуміння прочитаного й водночас формують певні комунікативні компетенції: отримання інформації шліхом розпитування, погодження чи непогодження з думкою співбесідника. У кожному розділі є вправи, присвячені розвитку навичок аналізу та побудови термінів, пов'язаних з темою тексту. Окремі розділи містять вправи, присвячені роботі з найбільш поширеними скороченнями. На етапі післятекстової роботи студентам пропонується обговорення певних проблем, написання резюме тексту, історії хвороби. Використання таблиць, схем, ілюстрацій допоможе задіяти різні види пам'яті до засвоєння мовного матеріалу.

Розділи, присвячені доклінічній тематиці, містять вправи, які формують мовленнєві навички, необхідні для академічної та професійної діяльності, наприклад, написання CV. Розділи, присвячені клінічній тематиці, містять вправи, які формують у студентів навички спілкування з хворими та їх рідними.

Кожний розділ закінчується списком необхідної термінології. Термінологічна та нетермінологічна лексика семантизується за допомогою дефініцій англійською мовою, що допоможе студентами працювати з англомовною довідковою літературою. Крім того, така робота з лексикою допоможе засвоїти процедурний вокабуляр, тобто лексику, яка використовується для пояснення термінології.

Додатки містять список найбільш розповсюджених словосполучень (Important collocations), список найбільш поширених терміноелементів з їх значенням, короткий граматичний довідник (Essential grammar), список неправильних дієслів (Irregular verbs), список виразів, які використовуються для обслуговування певних комунікативних ситуацій (Functions).

Практикум упорядкований у формі робочого зошита й призначений для використання кожним студентом окремо.

Практикум також може бути використаний для занять з аспірантами, лікарями та усіма, хто хоче поліпшити знання англійської мови.

На закінчення наголосимо, що при відборі текстового матеріалу ми, перше за усе, користувалися критерієм їх автентчності. Думка авторів цих текстів може не збігатися із засадами та нормами системи охорони здоров'я, прийнятими в Україні. Крім того, тексти були скорочені з урахуванням їх лінгвістичної складності й адаптовані до потреб вивчення мови студентами-медиками. Отже, вони ілюструють лише вживання певних мовних фактів і не можуть бути використані як джерело наукової інформації.

Джерела текстового матеріалу

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UNIT 1

Grammar Revision: to be

Test your grammar (to be done before the class).

Fill in the gaps:
1. I … a student. 2. His name … Nick. 3. They … from London. 4. She … 20. 5. We … not doctors. 6. … you from Greece? 7. Where … he from? 8. How old … they?

Choose the proper version:

1. a) He is a student? - b) Is he a student?
2. a) Lilly not from London. - b) Lilly is not from London.
3. a) Where is she from? - b) Where does she from?
4. a) What is his name? - b) What his name is?
5. a) She is 20 years. - b) She is 20 years old.
6. a) They are doctors. - b) They am doctors.
7. a) I am not English. - b) I not am English.

Use the keys to check your test.
1. am, 2. is, 3. are, 4. is, 5. Are, 6. are, 7. is, 8. Are, 9. b, 10. b, 11. a, 12. a, 13. b, 14. a, 15.a.

If your score is 14 and less revise the grammar using any grammar book.

Socializing: MEETING PEOPLE

1. Introduce yourself to your neighbor on the right and your neighbor on the left Tell your name, age, where you are from, and phone number.

2. If you want to know the person's first name, surname, age, phone number, what questions can you ask?

What's …. …?
How old …. …?
Where … … from?

Fill in the table:

	First name	Surname	Age	From	Phone number
Me					
Student 1					
Student 2					

Introduce your neighbors to the class. Use: ***This is …, Let me introduce …***

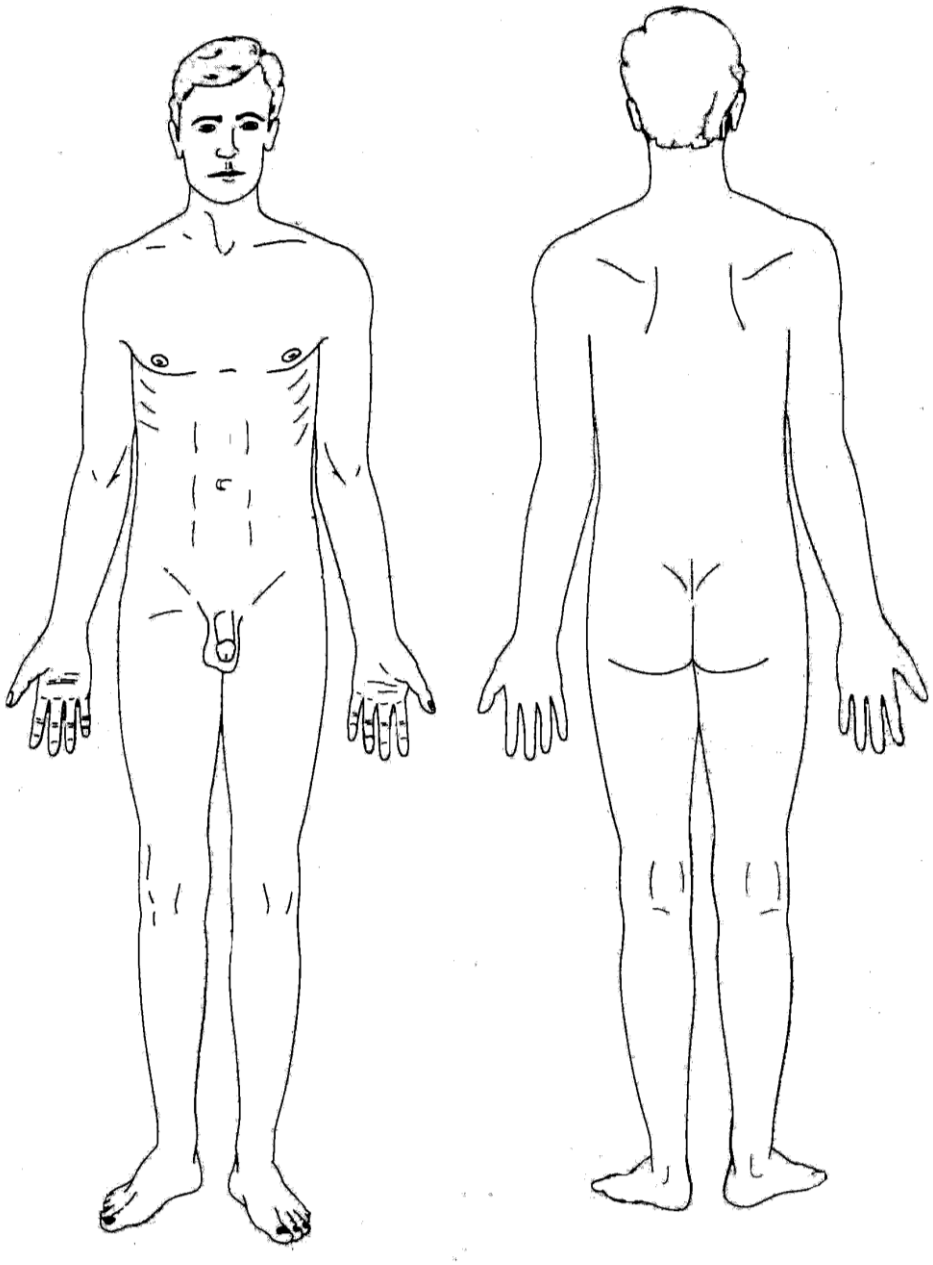
Ask two more persons and tell the class about them.

3. Tell the class about the place you are from, about the people living there.

Some words about places: city, town, village, large, small, noisy, quiet, clean, dirty, safe, dangerous, old, new, ancient, historic, beautiful, industrial, cosmopolitan, capital, provincial, little, small, attractive, costal, agricultural, farming, fishing, mining.
Some words about people: friendly, unfriendly, busy, boring, interesting, nice, lovely, kind, gentle, warm, evil.

Language of Medicine: HUMAN BODY

4. Look at the picture and write the parts of the body you know.
Ask your neighbors and the teacher about what you don't know.
Ask about their spelling.



5. Do the word search. Find 12 words denoting parts of the body. Use the definitions:

A	E	B	S	B	I	N	T	E	S	T	I	N	E
E	A	F	K	F	C	H	K	C	I	C	O	E	A
B	R	A	I	N	K	A	C	L	A	A	F	R	L
G	D	G	N	E	H	E	N	G	E	T	Q	V	A
A	P	D	G	O	A	M	T	I	S	S	U	E	H
G	A	R	N	T	D	Q	S	P	D	U	F	S	I
D	D	F	H	E	A	R	T	D	U	A	V	A	U
I	A	S	R	Y	F	O	O	P	L	X	H	Z	R
D	T	A	H	E	K	F	M	O	U	T	H	R	I
N	M	S	R	Q	F	M	A	V	E	W	P	G	N
O	L	I	V	E	R	B	C	B	B	E	B	O	E
G	C	D	C	I	C	N	H	E	I	C	M	E	L

- the organ inside your head that controls how you think, feel, move;
- the organ in your chest that pumps blood though your body;
- a large organ in your body which produces bile;
- the organ inside your body where food begins to be digested;
- the long tube that takes food from your stomach out of your body;
- the organ of vision;
- the organ of hearing;
- the natural outer layer of a human body;
- the part of your face which you put food into, or which you use for speaking;
- one of the thin parts like threads inside your body along which feelings and messages are sent to the brain;
- the liquid waste that comes out of your body when you go to the toilet;
- structure of the body made up of similar cells.

BASIC TERMINOLOGY

Bile –a green-brown liquid formed in the liver
Body –an entire animal organism
Brain – the organ inside your head that controls how you think, feel, and move
Digest (v) - to change food that you have just eaten into substances that your body can use
Ear – the organ you hear with
Eye – the part of the body that people use to see
Heart – the organ which pumps blood through the body
Intestine – the long tube that takes the food from your stomach out of the body
Liver – a large organ in your body which produces bile and clears your blood
Mouth – the part of your face which you put food into
Nerve –one of the thin parts like threads inside your body along which feelings and messages are sent to the brain
Skin – the outer layer of the human body
Stomach – the organ inside your body where food begins to be digested
Tissue – the material formed of animal or planet cells
Urine – the liquid waste that comes out of your body when you go to the toilet

UNIT 2

GRAMMAR REVISION: THERE + TO BE; SOME, ANY, NO;
Test your grammar (to be done before the class).

1. Choose the proper version:
1). My room is not big. There *is/are* a sofa, a desk, a wardrobe. 2). *There/These* are two armchairs in it. 3). There are some *book/books* on the desk. 4). There *is/are* a plant, 5). But there *is/are* not 6). *some/any* flowers. 7).. There are some *picture/pictures* on the walls.

2). Fill in the gaps:
8). There _____ five desks in the classroom. 9). There _____ a blackboard ____ the wall. 10). There _____ any flowers. 11) There are ____ plants.

3). Each sentence has a mistake. Find and correct it:
12). It a modern laboratory. 13). There are a bookcase, a refrigerator, a desk, a computer, but there isn't a television. 14). There are two microscope on the desk. 15). There is some charts on the walls. 16). There are some journals and books in the bookcase but there aren't some magazines. 17). There are any diskettes and CD's next to the computer. 18). On the shelf there is some boxes and tubes. 19). There are some chair in the laboratory. 20). Are there some students in the room?

Use the keys to check your test.
1). Is, 2). There, 3) books, 4). Is, 5). are, 6). any, 7). pictures, 8). Are, 9). is, 10). Aren't, 11). Some, 12). It **is** a 13). There ~~are~~ **is** a bookcase 14). There are two microscope**s** 15). There ~~is~~ **are** some 16). But there aren't ~~some~~ **any** magazines. 17). There are ~~any~~ **some** diskettes 18). On the shelf there ~~is~~ **are** some 19). There are some chair**s**. 20). Are there ~~some~~ **any** students

If your score is 18 and less revise the grammar using any grammar book.

KEY WORDS
Ancient – belonging to a time long ago
Divide – to separate something (an area, group, object) into two or more parts
Meaning - the thing or idea that a word represents
Origin - the situation, place from which something begins
Ray - a narrow beam of light from the sun of from something such as lamp
Root – the basic part of a word which shows its main meaning
Tumor - a mass of diseased cells in the body that have divided and increased too quickly
Vowel - a letter of the alphabet used to represent a vowel (a, e, i, o, u)

Language of Medicine: MEDICAL SCIENCES AND PROFESSIONS

1. Read how we build and analyze medical words:

MEDICAL WORDS

About 90 % of medical words are of Ancient Greek and Latin origin. It is not difficult to understand them. Study the structure of a medical word **cardiologist** (a doctor who treats the heart):

cardi/ o / log / ist

Cardi is a root, **o** – a combining vowel (these two together are a combining form), **log** is another root, **ist** is a suffix. Some combining forms can be used only at the end of the word (they resemble suffixes and are often called suffixes). For example,

-logist - specialist
-logy - science

Combining forms which can be used at the beginning or in the middle of the word:

cardio - heart
hepato - liver
gastro - stomach
entero - intestine
ophthalmo - eye
oto - ear
dermato - skin
stomato - mouth
neuro - nervous system
uro - urinary system
gyneco - woman
histo – tissue
radio - rays
onco - tumor
bio – life

When we analyze medical words we divide them into combining forms and find the meaning of each. We start the analysis from the end:

cardiology = cardio (heart) + logy (science) , i.e. science about the heart.

The real meaning of the word is broader, cardiology is a branch of medicine dealing with heart diseases and their treatment. But literary meaning helps to understand the terms.

2. Use the information of the text and match the following terms with their definitions:

Cardiologist	Science dealing with the diseases of the mouth
Hepatology	Science about life
Gastroenterology	Specialist in eye diseases
Ophthalmologist	Specialist in heart diseases
Biology	Study of the liver
Stomatology	Science about the digestive system

3. Give the medical word:

1. One who specializes in the study of the nervous system _____

2. Branch of medicine dealing with the use of x-rays _____

3. Specialist in eye diseases _____

4. Branch of medicine dealing with skin diseases _____

5. One who specializes in the study of the liver _____

4. Explain medical words:

E.g. Cardiology is the study of the heart.
Cardiologist is a specialist in heart diseases.

Neurology

Gynecology

Urologist

Hepatology

Gastroenterology

Oncologist

Ophthalmology

Dermatologist

Stomatology

Radiologist

Histology

Microbiology

5. Read the definitions of medical professions and fill in the gaps with the word from the box:

Psychiatry, science, internal, specialist, care, specializes, diseases, medical, physician, women

a) **Surgeon,** medical _____performing operations

b) **Pediatrician**, specialist in _____of children

c) **Internist,** doctor who _____in the diseases of the _____organs

d) **Physician,** licensed _____doctor

e) **Nurse,** one who is trained to _____for the sick

f) **Obstetrician,** _____ who specializes in pregnant _____.

g) **Psychiatrist,** one who specializes in _____.

h) **Dentist,** one who specializes in the _____of dentistry

6. Fill in the chart with the names of sciences and professions:

_____ – PEDIATRICS
_____ – OBSTETRICS
_____ – NURSERY
_____ – INTERNAL MEDICINE
PSYCHIATRIST – _____
DENTIST – _____
_____ – SURGERY

Analyze the terms:

Neurosurgery

Cardiosurgery

Radiobiology

6. Describe what these medical professionals do. Use the words ***treat, labor, care for****:*

E.g. A pediatrician treats children.

An obstetrician _____
A nurse _____
An internist _____
A psychiatrist _____
A dentist _____
A neurosurgeon _____
A cardiosurgeon _____

Socializing: SPEAKING ABOUT PLANS AND AMBITIONS:

7. Answer the questions:

What do you want to be?
What field of medicine do you want to specialize in?
Where would you like to work after the graduation (in a hospital, outpatient department, research institute, university department)?
What are you going to do for this?

8. Ask your group mates and make a report:

Everybody ...

Nobody ...

Almost everybody ...

Only two students ...

9. Tell the class about medical professions in your family.

Socializing: WHERE IS IT?

10. These are the departments of a university:

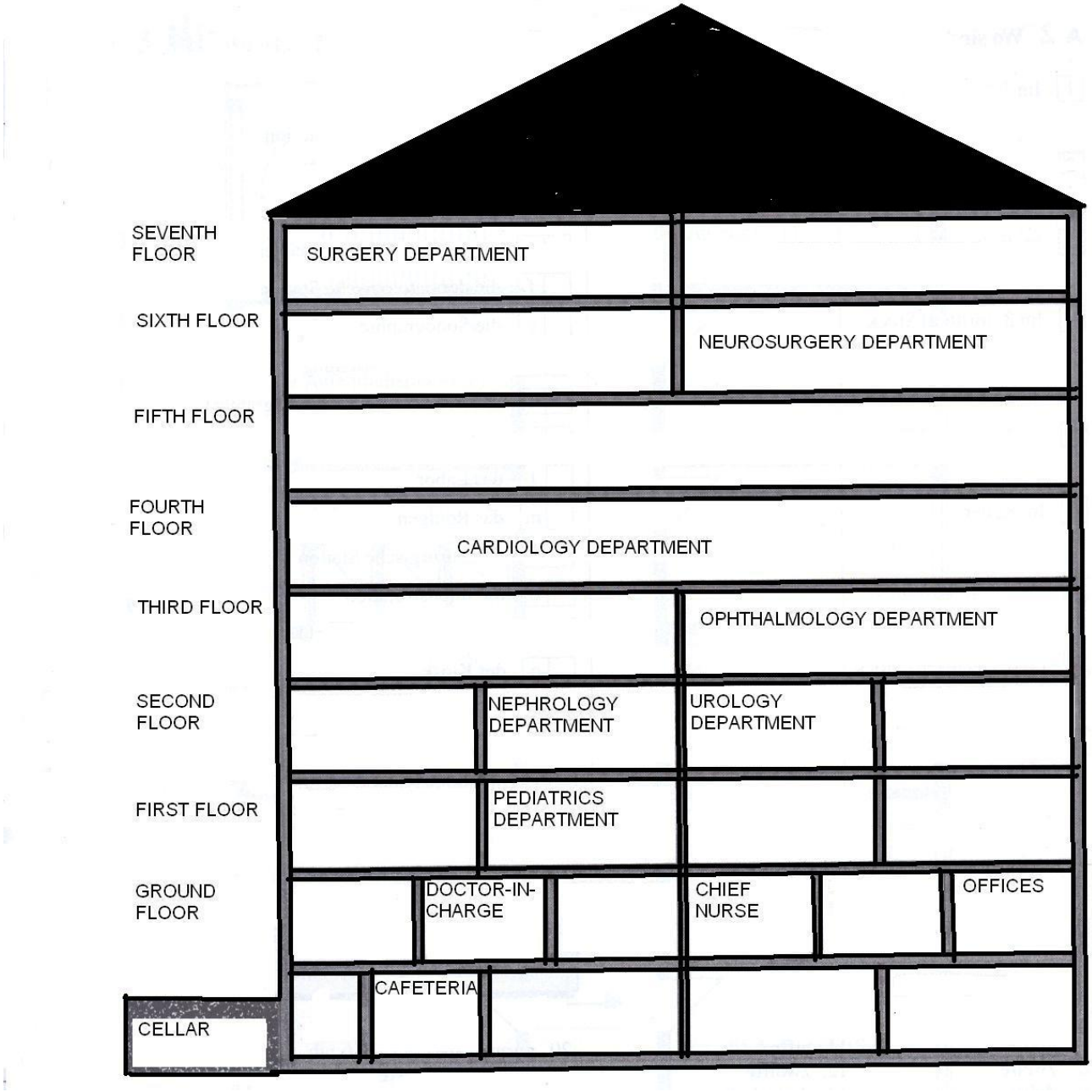
Anatomy Department, Biology Department, Chemistry Department, Physics Department, Therapy Department, Obstetrics and Gynecology Department, Histology Department, Pediatrics Department, Surgery Department, Genetics Department, Microbiology Department, Neurology Department, Physiology Department, Pathology Department, Hygiene Department, Oncology Department, Ophthalmology Department, Psychiatry Department, Dentistry Department, Traumatology Department.

Describe the university you study in.

11. Work in pairs. Ask Where-questions about the departments and offices of the university hospita missing in your scheme. The departments and offices are: ***ADMISSION DEPARTMENT, CAFETERIA, CARDIOLOGY DEPARTMENT, CHIEF DOCTOR, CHIEF NURSE, DOCTOR-IN-CHARGE, ENT DEPARTMENT, GYNECOLOGY DEPARTMENT, INTENSIVE CARE UNIT, NEPHROLOGY DEPARTMENT, NEUROLOGY DEPARTMENT, NEUROSURGERY DEPARTMENT, OBSTETRICS DEPARTMENT, OFFICES, OPHTHALMOLOGY DEPARTMENT, PATHOLOGY DEPARTMENT, PEDIATRICS DEPARTMENT, PHARMACY, RADIOLOGY DEPARTMENT, SURGERY DEPARTMENT, THERAPY DEPARTMENT, UROLOGY DEPARTMENT***

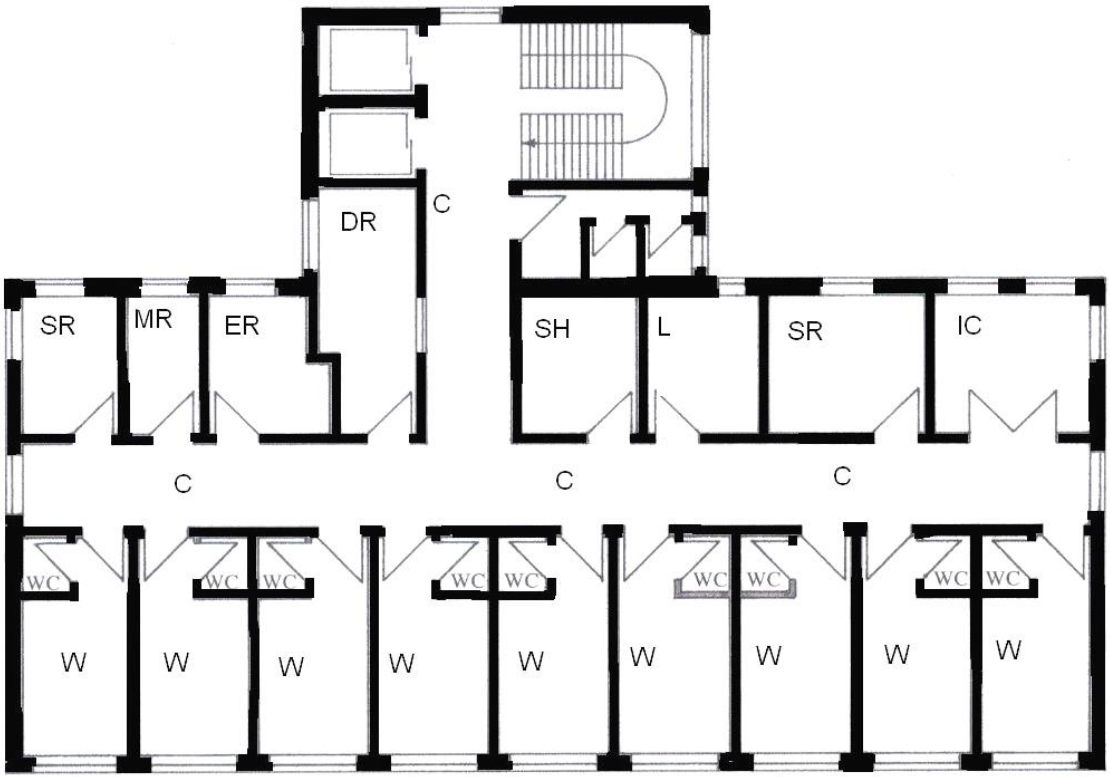
(Information for student B. is in the APPENDIX).

Write the departments on the scheme and compare your scheme with the partmer.



Describe the university hospital.

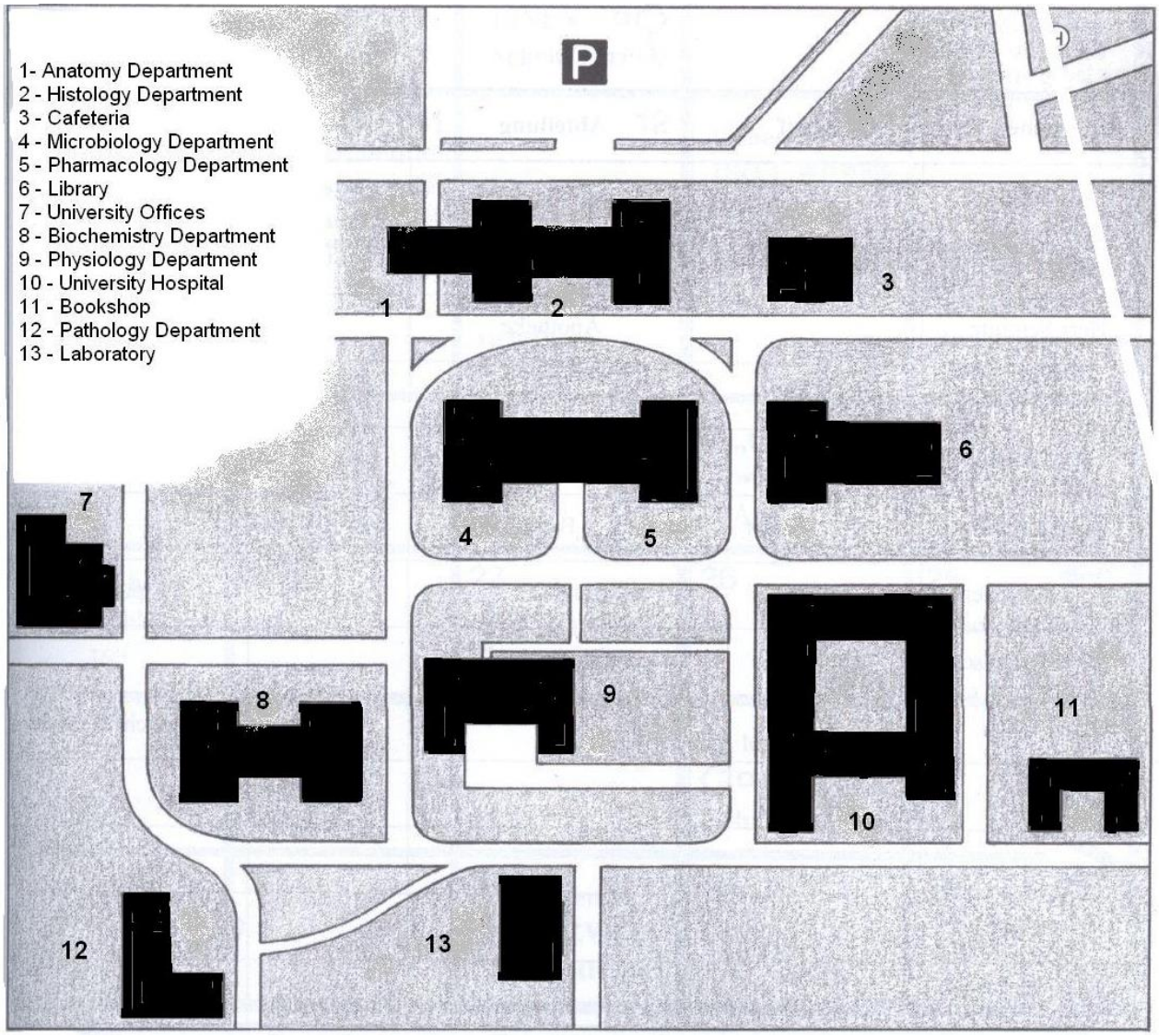
12. Look at the layout of a hospital department. Describe it.



DR – dressing room
C – corridor
SR – staff room
MR – manipulation room
ER – examination room
SH – shower
L- laboratory
IC – intensive care unit
WC – toilet
W - ward

13. This is a map of a university campus.
Ask the way.

- Excuse me!
- Yes.
- Can you tell me the way to the library?
- It's go down this street and turn left/right. (It's over there. It's on the left/right/ It's opposite/ next to the newsagent's.
- Thank you!



Basic terminology

Dentist – someone whose job is to treat people's teeth
Dermatology – branch of medicine which deals with the skin and its diseases
Gastroenterology - branch of medicine which deals with the digestive system and its diseases
Gynecology – study of the disease of women
Hepatology - branch of medicine which deals with the liver and its diseases
Internist – doctor who specializes in diseases of the internal organs
Neurology - branch of medicine which deals with the nervous system and its diseases
Nurse – someone who is trained to look after people who are ill or injured, especially in hospital
Obstetrician - a doctor who has special training in obstetrics
Obstetrics – the part of medical science concerned with the birth of children
Oncology - the branch of medicine that is concerned with tumors
Ophthalmology - study of the eye and its diseases
Pediatrics – branch of medicine dealing with the diseases of the children and their cure
Physician – licensed medical doctor
Radiology – branch of medicine using radiant energy in diagnosis and treatment of diseases
Surgery – medical treatment in which a doctor cuts open your body to repair or remove something inside
Urology – study of the urinary system

UNIT 3

GRAMMAR REVISION: PRESENT SIMPLE

Test your grammar (to be done before the class).

Use the proper form of the verb:

1) We (study) Anatomy. 2) This (be) a difficult subject. 3) We (learn) a lot of new terms, 4) they (be) special words which 5) (describe) the human body. 6) The body (consist) of organs and systems. 7) The human body (have) the following systems: digestive, respiratory, cardiovascular, reproductive, motor, urinary, nervous.

Correct the mistakes:

8) London is a city big. 9) My mother work in a hotel. 10) Does he watches TV in the evening? 11) He is like watching football. 12) On Sundays we eats out. 13) You like fishing? 14) My brother no have a dog. 15) I doesn't like going to disco. 16) Do she live in a house or a flat? 17) They works hard. 18) Where does you usually go on Sunday? 19) Live you in a flat? 20) He not smoke.

Use the keys to check your test:

1) study, 2) is, 3) learn, 4) are, 5) describe, 6) consists, 7) has, 8) London is a ~~city big~~ **big city**. 9) My mother work**s** 10) Does he ~~watches~~ **watch** 11) He ~~is~~ like**s** 12) On Sundays we ~~eats~~ **eat** 13) **Do** you like 14) My brother ~~no have~~ **doesn't have** 15) I ~~doesn't~~ **don't** 16) ~~Do~~ **Does** she live 17) They ~~works~~ **work** 18) Where ~~does~~ **do** you 19) ~~Live you~~ Do you live 20) He **does** not smoke.

If your score is 18 and less revise the grammar using any grammar book.

KEY WORDS

Blood - the red liquid that your heart pumps round your body
Cartilage – strong stretchy substance that is around the joint in a person's or animal body
Chambers – an enclosed space especially in your body
Conduct *(v)* – to allow something to travel along or through
Connective - joining two or more things together
Contract *(v)* - to become smaller or narrower
Digestive – connected with the process of digestion
Epithelium – cellular substance of skin and mucous membrane
Excitation – stimulation, irritation
Genetic – connected with genes
Gland – an organ of the body which produces a substance that the body needs
Glandular – related to the glands
Line *(v)* – to form a layer over the inner surface of something
Muscle – one of the pieces of flesh inside your body that connects your bones together
Reproduction – the process of producing young animal or plant
Respiratory – connected with breathing
Skeleton - the structure consisting of all the bones in a human or animal body
Surface – the outside or top layer of an object
Survival – the state of continuing to live or exist
Transmit *(v)* - to send or pass something from one person, thing or place to another

Urinary - connected with the urine or parts of your body through which urine passes
Vessel – a tube that carried blood through your body

Socializing: WORK DAY

Has anything in your life changed since you've become a student?
In what way is it different from the school life?
What subjects do you study?
Are they the same you studied at school?

*1. These are the subjects studied in medical schools. Which of them are preclinical (**pre**- means before; **clinical** – pertaining to disease development), which of them are clinical:*

Anatomy, Physiology, Chemistry, Biochemistry, Surgery, Therapy, Pediatrics, Urology, Neurology, Cardiology, Immunology, Biology, Microbiology, Psychiatry, Dermatology, Ophthalmology, Otorhinolaryngology, English, Ukrainian, Latin, Philosophy, Pathology, Gynecology, Obstetrics, Allergology, Genetics, Radiology, Immunology, Gastroenterology.

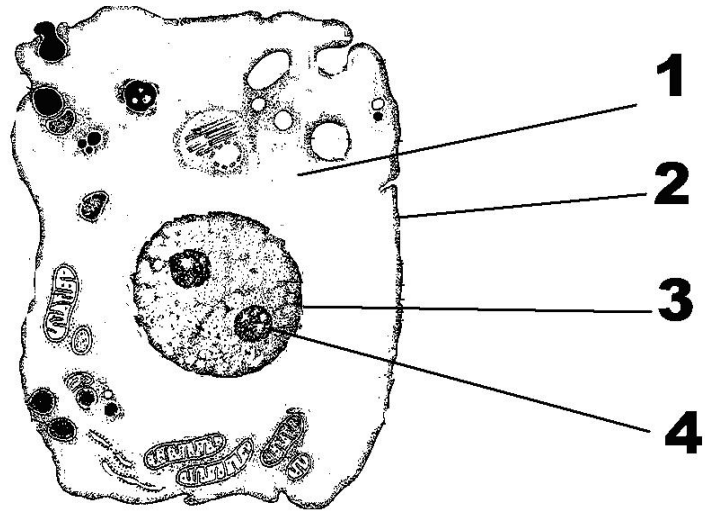
2. Work in pairs. Arrange a meeting with your friend (Your timetable is in the Appendix).

E.g.
- What about Monday 2 p.a.?
- Oh, no. I cannot. We have a lecture in Anatomy. / I have to work for the test in Biology. / It's OK.

Language of Medicine: STRUCTURE OF THE HUMAN BODY

*3. **Anatomy, Histology, Cytology, Embryology** are the sciences about the structure of the human body.*
*Analyze the words **Histology, Cytology, Embryology**. Find suffixes.*
*Study the combining forms: **cyto- cell, embryo- embryo, histo – tissue.***
Which of them is about different organs, cells, tissues, embryos?

3. Study the basic structures of a cell:



1 – cytoplasm, 2 – cell membrane, 3 – nucleus, 4 – chromosomes

5. Read the text quickly and arrange the structures in the order of their complexity: **Organ, cell, system, tissue**

STRUCTURE OF THE HUMAN BODY

The cell is the fundamental unit of every animal or plant. Cells are everywhere in the human body - in every tissue, every organ. All cells are similar. They contain protoplasm. Cell membrane surrounds and protects the internal environment of the cell. The nucleus controls reproduction of a cell, and contains genetic material.

Chromosomes are 23 pairs of thin strands of genetic material (DNA). They are within the nucleus of a cell. These 23 pairs of chromosomes contain genes. They determine the hereditary makeup.

Cytoplasm is the protoplasmic material outside the nucleus. It carries on the work of the cell (in a muscle cell, it does the contracting; in a nerve cell, it transmits impulses). Cells are different because they carry out their individual functions.

In all multicellular (*multi* means *many*) forms of life cells form groups called tissues. Tissues are collections of cells and together perform specific functions. The major tissue types of the human are epithelia, connective, muscle, and neural.

Epithelia cover every body surface and line the digestive, reproductive, respiratory, and urinary tracts. In addition, epithelial tissues line the chambers in the eye, ear, and brain, the inner surfaces of blood vessels, the heart, and the chest cavity. Glands also consist of epithelial tissue. Glandular cells secrete various substances into ducts, or into blood.

Connective tissues connect structures, provide support and protection for body organs, fill spaces, store fat, produce blood cells, aid in the repair of tissues, and provide protection against disease agents. The major types of connective tissue include fat, blood, bone, cartilage, reticuloendothelia.

Muscle tissues have the ability to contract. Such contractions move the body skeleton and internal organs. There are three types of muscle tissue: cardiac (heart), skeletal, and smooth.

Nerve or neural tissue takes part in the stimulation, and control of body functions and activities. Nervous tissue also can conduct or transmit waves of excitation to nerve cells, muscles, or glands.

Organs are combinations of tissues that perform complex functions. An organ consists of two or more kinds of tissues and performs specific and complex functions.

The human body consists of several organ systems. Each of these systems includes a set of organs. These organs work together to perform specialized functions essential to the survival of the individual.

(From *THE LANGUAGE OF MEDICINE*)

6. Use the information of the text and say in one word:

The substance which fills all types of cells (P_____)

The structure working to protect the cell (M_____)

The structure which controls everything in the cell (N_____)

A part of any cell that is shaped like a thread and controls everything that a plant or animal has (C_____)

The smallest part of a living thing that can exist independently (C_____)

A group of cells performing a specific function (T_____)

A group of organs performing complex functions (S_____)

A part of the body such as heart, or lungs that has a particular purpose (O _____)

7. True or false Make the false sentences true:

- All living organisms consist of cells.
- The chromosomes consist of genes.
- Cytoplasm is inside the nucleus.
- Cells are different because they have different number of chromosomes.
- Collections of cells which perform the same function are chromosomes.
- Connective tissues cover body surfaces and line cavities.
- Muscular tissue is responsible for movements.
- Organs consist of various types of tissue.

*Work in pairs. Act agreement and disagreement (See **FUNCTIONS** section at the end of the book).*

8. Find the statements with the same meaning:

The human body consists of cells.

Cytoplasm is responsible for the cell function.

Tissues are groups of cells, which do the same work.

Epithelial tissue is present on the body surfaces.

Muscle tissue is responsible for movement of the body and internal organs.

The scientists distinguish three groups of muscular tissue.

Nerve tissue controls the work of the organism.

An organ contains various tissues.

There are several organ systems in the human organism.

9. Study the combining forms:

-cyte – cell
-genesis – development
-pathy - disease

Analyze the words:

Cytochemistry

Cytologist

Cytophysiology

Cytogenesis

Embryogenesis

Embryologist

Cytopathy

Embryopathy

Histocompatibility

Histogenesis

Histochemistry

Histologist

Embryocyte

Gastrocyte

Cardiocyte

Cardiopathy

10. Act as a teacher. Write 5 questions about the structure of a body. Use the words ***Why, How many, What, Where, How.*** *Ask your group mates.*

1).

2).

3).

4).

5).

11. Match the system and its organs. Use the words from the box:

Esophagus, nerve, heart, intestine, trachea, tendons, kidneys, cartilages, arteries, bronchi, brain, stomach, veins, testis, liver, spinal cord, bladder, ovary, muscle, pancreas, uterus, bones, lungs, gallbladder, ureter, urethra, joint.

System	Organs
Digestive	
Urinary	
Respiratory	
Reproductive	
Nervous	
Cardiovascular	
Musculoskeletal	

Basic terminology

Bone – one of the hard parts that together form the frame of a human or animal body
Cartilage -strong stretchy substance that is around the joint in a person's or animal body
Cell – the smallest part of a living thing that can exist independently
Chromosome – one of several small bodies in the nucleus of a cell
Cytoplasm - the jelly-like substance that surrounds the nucleus of a cell
Gene – biological unit which transmits hereditary characteristics
Membrane - the envelope surrounding a cell
Muscle - one of the pieces of flesh inside your body that connects your bones together
Nucleus - the part of a cell that contains the genetic material
Organ – a part of the body, composed of more than one tissue, that forms a structural unit responsible for a particular function (or functions)
Protoplasm – the material of which the living cells are made which includes the cytoplasm and nucleus
Tissue – a collection of cells specialized to perform a particular function

UNIT 4

GRAMMAR REVISION: PASSIVE VOICE

Test your grammar (to be done before the class).

Each sentence has a mistake. Find and correct it:

1). The body compose of eight systems. 2). Does the heart cell is called cardiocyte? 3). This disease are treated surgically. 4). The lectures delivered by professors. 5). Some muscles do called according to their structure.

6). How many groups the muscles are divided into? 7). The cardiovascular system is formed by the heart, arteries, veins and capillaries? 8). Great research work is carry out by the scientists of our university.

Use the proper form of the word:

9). The anatomical divisions of the abdomen (use) in anatomy texts. 10). They (describe) the regions 11) where the organs and structures (find). 12). The term "clinical division of the abdomen" (use) to describe divisions of the abdomen 13) when the patient (examine) in clinic.

Use the keys to check your test.

1). The body ~~compose~~ **is composed** 2). ~~Does~~ **Is** the heart cell ~~is~~ called 3). This disease ~~are~~ **is** treated 4). The lectures **are** delivered … 5). Some muscles ~~do~~ **are** called 6) How many groups **are** the muscles ~~are~~ divided 7). **Is** the cardiovascular system ~~is~~ formed 8). Great research work is ~~carry~~ **carried** 9). Are used 10).describe 11) are found 12) is used 13) is examined

If your score is 12 and less revise the grammar using any grammar book.

KEY WORDS

Ankle – the joint between your foot and your leg
Birth – if a woman gives birth, she produces a baby from her body
Dense – a substance that is dense has a lot of mass in relation to its size
Deposit *(v)* – to leave a layer of a substance on the surface of something
Fetus – a young human or animal before birth
Flexible – something that is flexible can be bent of bend easily
Joint – a part of your body between two bones
Lower – at or near the bottom of something
Osseous - bony
Shaft – a thing long piece of metal
Shape – the outer form of something
Thigh – a top part of your leg
Upper – in a higher position than something
Wrist – the joint between your hand and the lower arm

Language of Medicine: MUSCULOSKELETAL SYSTEM

*1. Using the chart of the previous unit (Ex.11) describe the composition of each system. Use**:*** ***consist of, compose, be composed of.***

2. *Read the text. Choose the most suitable title for it:*

MUSCULOSKELETAL SYSTEM
BONE STRUCTURE
BONES
BONE FORMATION
MUSCLES
JOINTS
SKELETON

_____

Bones are composed of osseous tissue and blood vessels and nerves. Osseous tissue is a dense connective tissue which consists of osteocytes.

The bones of the fetus are composed of cartilage tissue, which resembles osseous tissue but is more flexible and less dense because of a lack of calcium. As the embryo develops, depositing calcium salts in the bones occurs, and continues throughout the life of the individual after birth.

The formation of bone depends on a proper supply of calcium and phosphorus to the bone tissue. Vitamin D helps the passage of calcium through the lining of the small intestine; and into the bloodstream. The necessary level of calcium in the blood is maintained by the parathyroid gland.

Bones all over the body are of several different types. Long bones are found in the thigh, lower leg, and upper and lower arm. These bones are very strong, are broad at the ends where they join with other bones, and have large surface areas for muscle attachment.

Short bones are found in the wrist and ankle and have small, irregular shapes. Flat bones are found covering soft body parts. These are the shoulder bone, ribs, and pelvic bones.

Sesamoid bones are small, rounded bones, the knee cap is the largest example of this type of bone.

The shaft of a long bone is called the diaphysis. Each end of a long bone is called an epiphysis. The surface of a long bone is covered by the periosteum, except at the ends of the epiphyses. Bones other than long bones are completely covered by the periosteum.

The bones of the skull protect the brain and structures related to it, such as the sense organs.

The vertebral, or spinal, column is composed of 26 bone segments. They are called vertebrae. The vertebrae are arranged in five divisions. The first seven bones of the vertebral column are the cervical vertebrae. The second set of 12 vertebrae are known as the thoracic vertebrae. The third set of five vertebral bones are the lumbar vertebrae. The sacrum is a slightly curved, triangular bone. The coccyx is formed from four small bones.

A joint is a coming together of two or more bones. There are three types of joints in the body.

The surface of the bones at the joint is covered with a smooth cartilage surface.

(From *THE LANGUAGE OF MEDICINE*)

3. Which was NOT mentioned in the text:

a) The structure of the bones.
b) The bones in the fetus.
c) The bones in infants.
d) The bones in teen-agers.
e) The bones in elderly.
f) Development of a bone.
g) Chemicals participating in bone formation.
h) Hormone regulation of the chemical composition of the bones.

g) Disturbances in chemical composition of the bones and their causes.
i) Treatment of malignant diseases of the bones.
j) Treatment of thyroid diseases.
k) Types of bones.
l) Anatomical structures of a bone.
m) Differences between different types of the bones.
n) The functions of the skull bones.
o) Divisions of the spinal column.
p) Diseases of the spinal column and their diagnosis.
q) Joints and their function.
s) Structure of the joints.
t) Functions of bursae.

4. Find the terms corresponding to the following common words and definitions:

Bony _____, bone cell _____, a long middle region of a bone _____, end of a bone _____, the membrane covering the bone _____, tailbone _____.

5. Find the answers to the questions:

1). What term is used for the cells forming the bones?

2). Why are the bones of the fetus soft and flexible?

3). Which two chemical elements determine the structure of the bone?

4). What function does vitamin D perform in bone formation?

5). What types of bones are there in the human body?

6). What are the structural elements of a long bone?

7). How do we call the outer layer of a bone?

8). What does the bones of the skull do?

9). How many vertebrae are there in the vertebral column?

10). How many divisions does the spinal column consist of? Name them.

6. Continue the statements:

1. The bones are formed by …
2. Bones are denser than cartilage because …
3. Calcium and phosphorus are necessary for …
4. The parathyroid gland is responsible for …
5. There are four types of bones in the body: …
6. Diaphysis is …
7. Epiphysis is …
8. Periosteum covers …
9. The function of the skull is …
10. The spinal column consists of …
11. The cervical spine consists of …
12. The spinal column is divided into five portions: …

7. Study the combining forms:

osteo- bone
arthro- joint
costo- rib
vertebro- vertebra
spondylo- vertebra
cranio- skull
sacro- sacrum
thoraco- chest
skeleto- skeleton

Match the terms and the definitions:

Osteocyte	Science of joints
Osteology	Disease of bones
Osteogenesis	Pertaining to ribs
Arthrology	Pertaining to lower back
Osteopathy	Bone cell
Arthropathy	Pertaining to muscles and skeleton
Costal	Pertaining to the skull
Cranial	A field of medicine dealing with bones
Lumbosacral	Disease of joints
Musculoskeletal	Development of bones

8. Study the picture and correct the mistakes:

1 – thigh;
2 – ankle;
3 – vertebra;
4 – skull;
5 – ribs;
6 – arm;
7 – shoulder bone;
8 – knee cap;
9 – leg;
10 – coccyx;
11 – pelvic bone;
12 – wrist.

*Work in pair and discuss what is right and what is not right (See **FUNCTIONS** for expressions of agreement and disagreement).*

9. Use your dictionary and add more captions.

13) –

14) –

15) –

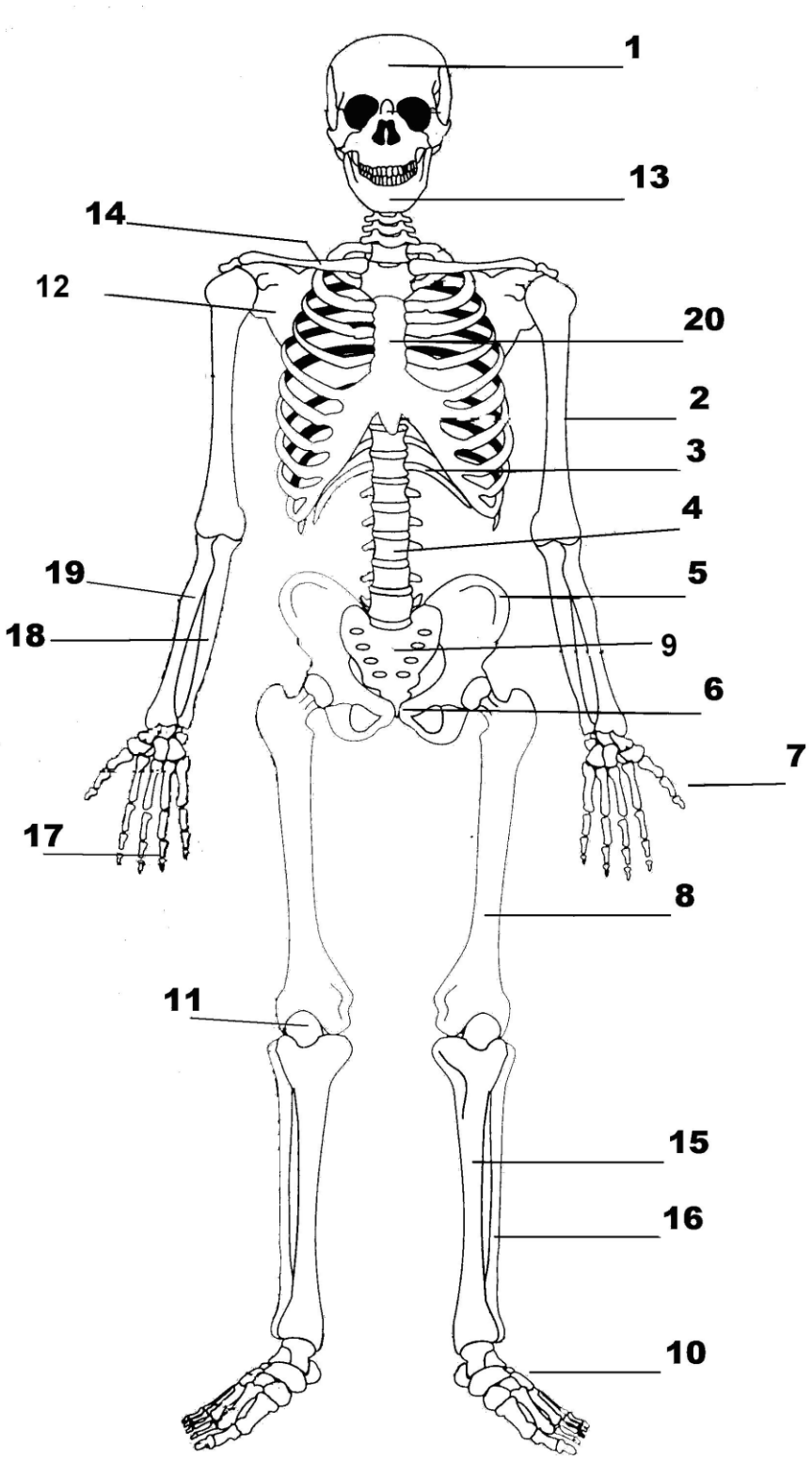
16) –

17) –

18) –

19) –

20) –



10. Try to explain the facts:

- Milk contains a lot of calcium.
- Small children fall down a lot but do not have many fractures.
- Deficiency of vitamin D in the diet causes bone problems in children.
- Pregnant and nursing mothers may have a lot of problems with their teeth.

11. Quiz

HEAD TO TOE ALL THE WAY DOWN – JUST DON'T GO OUT ON A LIMB

Phalanges, parietal bone, sternum, mandible, metatarsals, cervical vertebrae, coccyx, occipital bone, maxilla, clavicle, pelvis, femur, tibia, tarsals, patella, lumbar vertebrae, thoracic vertebrae.

Basic terminology

Calcium - a metallic bivalent element; atomic no. 20
Cervical - relating to a neck, or cervix, in any sense
Coccyx - the small bone at the end of the vertebral column in man, formed by the fusion of four rudimentary vertebrae
Diaphysis – shaft of a bone
Epiphysis - part of a long bone developed from a center of ossification distinct from that of the shaft and separated at first from the latter by a layer of cartilage
Knee – the joint between the end of the femur, the top of the fibia, and the back of the patella
Lumbar - relating to the loins, or the part of the back and sides between the ribs and the pelvis
Pelvis - the massive cup-shaped ring of bone at the lower end of the trunk, formed of the hip bone on either side and in front, and the sacrum, and coccyx posteriorly
Phosphorus - a nonmetallic chemical element, atomic no. 15
Rib - one of the twenty-four elongated curved bones forming the main portion of the bony wall of the chest
Sacrum - the segment of the vertebral column forming part of the pelvis; a broad, slightly curved, spade-shaped bone, thick above, thinner below, closing in the pelvic girdle posteriorly
Shoulder bone- the lateral portion of the scapular region, where the scapula joins with the clavicle and humerus and is covered by the rounded mass of the deltoid muscle
Skull - the bones of the head collectively
Spinal column - the series of vertebrae that extend from the cranium to the coccyx, providing support and forming a flexible bony case for the spinal cord
Thoracic - relating to the thorax
Vertebra (vertebrae *pl.*) - one of the segments of the spinal column
Vertebral - relating to a vertebra or the vertebrae

UNIT 5

Test your grammar (to be done before the class).

Use the proper word to combine the sentences:
1. The main part of the head … is composed of 26 bones is called the skull. 2. These bones form two basic parts of the skull … are termed facial and cranial parts. 3. The large cavity …. the brain is located is called the cranial cavity. 4. The cavities … the eyeballs are found are the orbits. 5. The point … two bones come together is called a joint. 6. The doctor … specializes in heart diseases is called a cardiologist. 7. The science … studies the joints is called arthrology. 8. The lectures … are delivered by Prof. Smith are attended by many students. 9. The school … we study is not far.

Combine two sentences into one:
10). The vertebra is a small bone. It is formed by the body and the arch. 11). In the spinal column there are seven cervical vertebrae, twelve thoracic vertebrae, five lumbar vertebrae, five sacral vertebrae and five more vertebrae. The latter form the coccyx. 12). The breastbone is a long bone. It is located in the middle of the chest.

Use the keys to check your test:

1) that (which), 2) that (which), 3) where, 4) where, 5) where, 6) who, 7) that (which), 8) which (that), 9) where, 10). The vertebra is a small bone which is formed 11). In the spinal column there are seven cervical vertebrae, twelve thoracic vertebrae, five lumbar vertebrae, five sacral vertebrae and five vertebrae which form 12). The breastbone is a long bone which is located
If your score is 10 and less revise the grammar using any grammar book.

KEY WORDS

Cardiac – connected with the heart
Conscious – awake and able to understand what is happening around you
Duct – a pipe or tube for carrying liquids
Fiber – the thin pieces of flesh that form the nerves or muscles in your body
Muscle – one of the pieces of flesh inside your body that connects your bones together and that you see when you move
Sebaceous – related to a part of the body which produces special oils
Smooth – a smooth surface is completely flat and even
Striated – having narrow lines or bands
Sweat - liquid that comes out through your skin when you are hot, frightened, or doing exercise
Visceral – connected with the viscera (the large organs inside your body)
Voluntary – voluntary movements of your body are controlled by you

Language of Medicine: MUSCLES. SKIN

1. *Read the texts and give the titles to them.*

There are three types of muscles in the body. Striated muscles, also called voluntary or skeletal muscles, are the muscle fibers which move all bones, as well as the face and eyes. We have conscious control over the activity of this type of muscle. Striated muscle fibers (cells) contain many nuclei. A delicate membrane surrounds each skeletal muscle fiber.

Smooth muscle, also called involuntary or visceral muscles, are those muscle fibers which move our internal organs (the digestive tract, blood vessels, and secretory ducts leading from glands). We have no conscious control over these muscles. There is only one nucleus to a cell in smooth muscle fibers. Skeletal muscle fibers are arranged in bundles, smooth muscle forms sheets of fibers as it wraps around tubes and vessels.

Cardiac muscle is striated in appearance but resembles smooth muscle in its action. Its movement is not consciously controlled. The fibers of cardiac muscle are found in the heart.

A loose form of connective tissue known as fascia binds separate muscles together. Muscle is attached to a bone by means of tendon.

The skin is the outer covering for the body. The skin and its accessory organs (hair, nails, and glands) are known as the integumentary system of the body. The skin also contains glands which secrete several types of fluids, nerves which carry impulses, and blood vessels which aid in the regulation of the body temperature.

The skin guards the deeper tissues of the body against excessive loss of water, salts, and heat and against invasion by microbes and their poisons. Secretions from the skin are slightly acid and this contributes to its ability to prevent bacterial invasion.

The skin contains two types of glands which produce important secretions. These are the sebaceous and sweat glands.

Nerve fibers under the skin act as receptors for sensations (pain, temperature, pressure, and touch).

Several different tissues in the skin help to maintain the body temperature (thermoregulation).

(From *THE LANGUAGE OF MEDICINE*)

2. How many difference can you trace between striated and smooth muscles?
What are they?

3. Which of the following functions is performed by skin:

Protection, digestion, sensation, temperature regulation, excretion, respiration, mastication.

4. Give a synonym:

striated muscle; smooth muscle; integument.

5. Listen to the statements. Do you agree with them?

6. These are the answers. What questions were asked:

a) _____
Three types.

b) _____
They are responsible for movement of the bones, face and eyes.

c) _____
Striated muscles are controlled consciously.

d) _____
They are found around the internal organs.

e) _____
In contrast to the other cells they contain many nuclei.

f) _____
They are found in the heart.

g) _____
Because it looks like striated muscles but works like smooth muscles.

h) _____
They are hair, nails, sebaceous and sweat glands.

i) _____
It contains sebaceous and sweat glands, nerves and blood vessels.

j) _____
It is responsible for sensation of pain, temperature, pressure, touch.

7. Continue the statements:

1). The three types of muscles are …
2). The work of smooth muscles is not …
3). There are several nuclei …
4). Smooth muscles are responsible for …
5). The cells of smooth muscles contain only one …
6). Skeletal muscle fibers form …
7). The integumentary system is composed of …
8). The skin is a sense organ responsible for …

8. Study the combining forms:

myo- muscle **dermato- skin**
dermo- skin **-pathy- disease**

Build medical words:

1) science about muscles
2) development of muscle tissue
3) muscle cell

4) pertaining to skin
5) disease of muscles
6) disease of bones
7) field off medicine that deals with skin disorders
8) development of bones
9) specialist in skin diseases
10) science about bones
11) study of the joints
12) disease of joints.

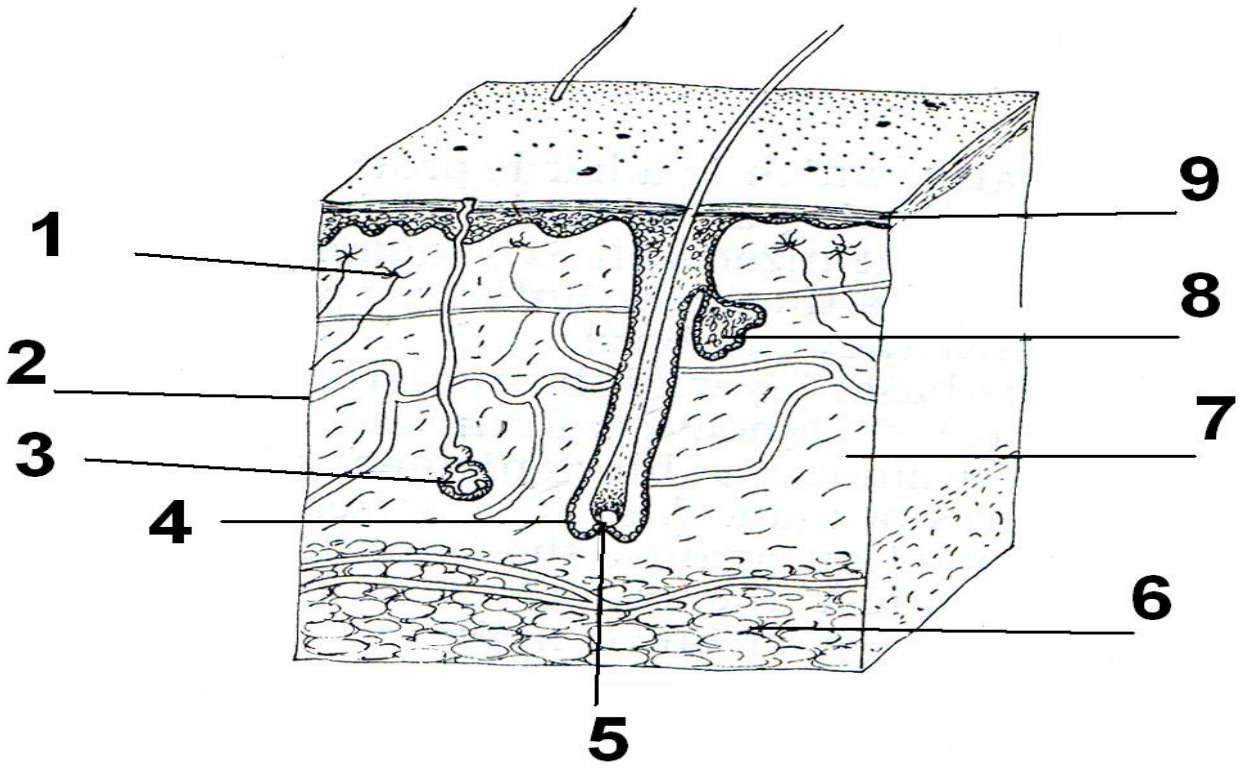
9. Read the abstract and fill in the gaps:

The three types of muscles are _____, _____, and _____. _____ are responsible for movement which is accomplished by the contraction and _____ of muscles. _____ _____ move the bones, face and eyes. The work of this type of muscles is controlled by our _____.

The muscles which move the digestive tract, blood vessels, secretory ducts are termed _____ _____. Our consciousness does not _____ their work.

Cardiac muscle _____ the appearance of striated muscles and function of smooth muscles.

11. Study the picture and describe the structure of the skin:



1 – nerve ending
2 – blood vessel
3 – sweat gland
4 – hair follicle
5 – hair root
6 – subcutaneous tissue
7 – corium (dermis)
8 – sebaceous gland
9 - epidermis

Basic terminology

Duct - tubular structure giving exit to the secretion of a gland, or conducting any fluid
Fiber - extracellular filamentous structures such as collagenic or elastic connective tissue fiber's
Muscle - a primary tissue, consisting predominantly of highly specialized contractile cells, which may be classified as skeletal muscle, cardiac muscle, or smooth muscle
Sebaceous gland - gland in the skin that that secretes an oily substance sebum providing a film over the skin
Visceral – r elating to the viscera
Viscus (pl. Viscera) - an organ of the digestive, respiratory, urogenital, and endocrine systems as well as the spleen, the heart, and great vessels
Voluntary - relating or acting in obedience to the will; not obligatory

UNIT 6

GRAMMAR REVISION: PLURAL OF THE NOUNS
Test your grammar (to be done before the class).

Use the proper form of the underlined words:
The brain consists of two (1) half, or hemispheres. The (2) bone, (3) joint, (4) muscle are the parts of the musculoskeletal system. Today we have two practical (5) class. The experiment was performed on (6) mouse. I think I need several (7) spectacles. There are 21 (8) student in the room. The study involved 20 patients, of them 12 woman. I don't have many hobby.

Use the keys to check your test:

1) halves, 2) bones, 3) joints, 4) muscles, 5) classes, 6) mice, 7) spectacles, 8) students, 9) women, 10) hobbies.

If your score is 9 and less revise the grammar using any grammar book.

KEY WORDS

Air – the mixture of gases that we breath and that surrounds the Earth
Cavity – a hole a space inside something
Cluster – a group of thing of the same type that are close together
Diaphragm – the muscle that separates your lungs from your stomach
Erythrocyte – red blood cell
Esophagus – the tube from your mouth to your stomach down which the food passes
Layer – an amount of a substance that covers all of a surface
Mediastinum - the median partition of the thoracic cavity containing all the thoracic viscera and structures except the lungs
Partition – a thin wall that separates one part from another
Sac a part inside a plant or an animal that is shaped like a bag and contains liquid or air
Vibrate – to shake or make something shake continuously with small fast movements

Language input: PLURAL OF MEDICAL WORDS

1. Write the plural of Latin and Greek words (use the information from your lessons of Latin or look them up in the dictionary):

Vertebra _____, bursa _____, bulla _____, areola _____, aphtha _____; adnexum _____, sanatorium _____, atrium _____, bacterium _____, diverticulum _____, ovum _____; calculus _____, bronchus _____, nucleus _____, bacillus _____, coccus _____; anastomosis _____, crisis _____, metastasis

_____, analysis _____, epiphysis _____, prosthesis _____, axis _____; apex _____, varix _____; ganglion _____, spermatozoon _____, phenomenon _____.

2. *Complete the rule:*

For words ending in -<u>is</u> drop ____ and add ____

For words ending in -<u>um</u> drop ____ and add ____

For words ending in -<u>us</u> drop ____ and add ____

For words ending in -<u>a</u> add ____

For words ending in –<u>ix, - ex</u> drop ____ and add ____

<u>BUT</u> VIRUS-VIRUSES, SINUS-SINUSES, APPARATUS-APPARATUS, ARCUS-ARCUS, STIGMA-STIGMATA

Language of Medicine: RESPIRATORY SYSTEM

The atmospheric air consists of different gases, of them oxygen, carbon dioxide, nitrogen.
Match their names with chemical formulas: N_2, O_2, CO_2.
How do we call the system which is responsible for breathing?
What are the organs of this system?

3. Do you know the meaning of the words ***pharynx, vocal cords, bronchioles, pleura, diaphragm, voice box, windpipe****?*

Read the text and check yourself.

RESPIRATORY SYSTEM

Air enters the body through the nose and passes through the nasal cavities. After passing through the nasal cavities, the air reaches the pharynx (throat).

There are three divisions of the pharynx. The nasopharynx is the first division. The second division of the pharynx is the oropharynx. The third division of the pharynx is the hypopharynx (also called the laryngopharynx). It divides into two branches, the larynx (voice box) and the esophagus.

The larynx contains the vocal cords. Sounds are produced as air passes the vocal cords and the cords vibrate. On its way to the lungs, air passes from the larynx to the trachea (windpipe). In the region of the mediastinum, the trachea divides into two branches called bronchi. Each bronchus leads to a separate lung, and divides and subdivides into smaller and finer tubes. The smallest of the bronchial branches are called bronchioles. At the end of the bronchioles are clusters of air sacs called alveoli.

The very thin wall allows for the exchange of gases between the alveolus and the capillaries which come in close contact with it. The blood which flows through the capillaries accepts the oxygen from the alveolus and deposits carbon dioxide into the alveolus. Oxygen is combined with hemoglobin in erythrocytes and carried to all parts of the body.

Each lung is enveloped in a membrane called the pleura. The outer layer of the pleura is the parietal pleura, and the inner layer is the visceral pleura. The right lung is divided into three lobes,

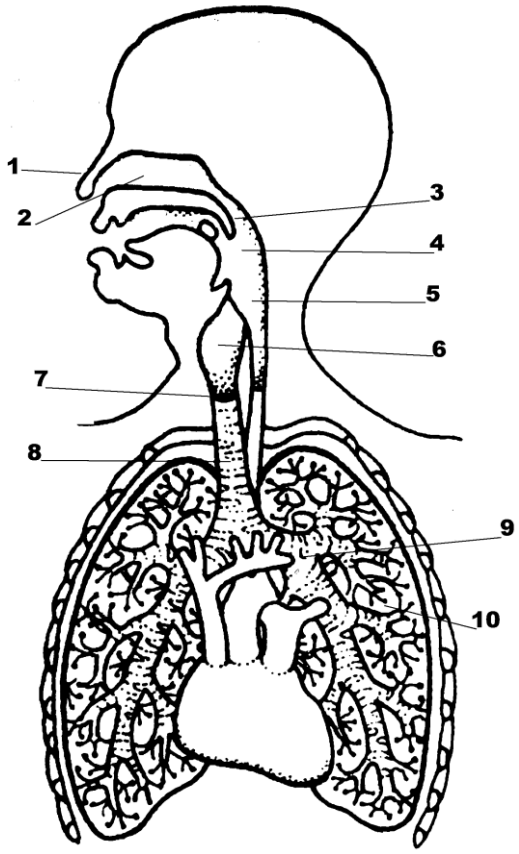
and the left lung is divided into two lobes. The lungs extend from the collarbone to the diaphragm in the thoracic cavity. The diaphragm is a muscular partition which separates the thoracic from the abdominal cavity and aids in the process of breathing.

(From *THE LANGUAGE OF MEDICINE*)

4. Read the text once again and draw the pathway of air from the nose to the capillaries of the lungs:

Nose → N _____ c_____ → P _____ → N_____ → O_____ → H_____ → L_____ → T_____ → B_____ → B _____ → A_____

5. Write the structures of the respiratory system:



1) –
2) –
3) -
4) -
5) -
6) -
7) -
8) -
9) -
10) -

.,

6. True or false. Make the false statements true:

- The nose is the first division of the respiratory system.
- The throat is divided into three portions.
- Vocal cords aid in sound production.
- Two bronchi lead to each lung.
- Alveoli are small bronchi.
- The blood takes carbon dioxide from the alveoli and gives away oxygen
- Hemoglobin aids in carrying carbon dioxide to different organs and tissues.
- The lungs are covered by the diaphragm.
- Each lung consists of two lobes.

- The diaphragm takes part in the act of respiration.

*Work in pair and act agreement and disagreement (See **FUNCTIONS** section).*

7. *You want to know:*
- ***the medical word for throat,***
- ***how many portions the pharynx is divided into,***
- ***how these portions are called,***
- ***what branches the trachea divides,***
- ***how the voice sounds are produced,***
- ***what structures are responsible for sound production,***
- ***what enables gas exchange.***

What questions can be asked?

Work in pairs. Ask and answer questions.

8. Describe the function of the following:

The vocal cords …

The pleura …

The diaphragm …

Hemoglobin …

9. Find the common words with the same meaning:

Pharynx _____, larynx _____, trachea _____

10. Write singular forms for the following.

Bronchi _____, alveoli _____, pharynges _____, larynges_____, capillaries_____

11. Learn the combining forms and their meaning.

rhino – nose
pharyngo – throat (pharynx)
laryngo – voice box (larynx)
tracheo – windpipe (trachea)
broncho – bronchi
pulmono – lung
pneumo – lung
-rrhea – discharge
-ptysis – spitting
-pnea – breathing
-thorax – chest
-plasty – surgical repair
-itis – inflammation
-scopy – visual examination
-stomy – making a new opening (a surgical procedure)
-tomy – surgical cutting
-ole – small
hemi - half
hemo - blood

Analyze the terms:

Rhinorrhea
Rhinoplasty
Pharyngitis
Laryngoplasty
Laryngoscopy
Laryngotracheobronchitis
Laryngostomy
Tracheotomy
Bronchitis
Bronchiolitis
Pulmonitis
Hemoptysis
Dyspnea
Hemothorax
Hemithorax
Bronchiole

12. Read the summary and correct the mistakes:

The bronchi are the main organs of the respiratory system. They are located in the chest. The lungs are separated by the mediastinum. The lungs are covered by the pleura. The right lung has two lobes, the left lung consists of three lobes. Gas exchange takes place in the bronchioles. The air comes to the mouth through the nose. Then it passes to the voice box, which divides into larynx and pharynx. From the larynx the air passes to the trachea which divides into several bronchi. Bronchioles are small bronchi. Alveoli are located at the ends of the capillaries.

13. Write a report about the respiratory system.

14. Did you know?

The total surface area of the alveoli is around the size of a tennis court.

The maximum amount of air adult male lung can hold is 5.7 liters and in adult female it is 4.2 liters.

Basic terminology

Alveolus - one of the thin-walled terminal dilations of the respiratory bronchioles, across which gas exchange occurs between alveolar air and the pulmonary capillaries
Bronchiole - one of six generations of finer subdivisions of the bronchi, all less than 1 mm in diameter
Bronchus - one of the two subdivisions of the trachea serving to convey air to and from the lungs
Carbon dioxide - the product of the combustion of carbon with oxygen
Diaphragm - the musculomembranous partition between the abdominal and thoracic cavities
Larynx - the organ of voice production; the part of the respiratory tract between the pharynx and the trachea;
Lung - one of a pair of light, spongy organs in the thorax, constituting the main component of the respiratory system
Mediastinum - the median partition of the thoracic cavity, containing all the thoracic viscera and structures except the lungs
Nitrogen - a gaseous element, atomic no. 7, forms about 78.084% by volume of the atmosphere
Oxygen - a gaseous element, atomic no. 8; an abundant and widely distributed chemical element, which combines with most of the other elements to form oxides and is essential to animal and plant life
Pharynx - the upper expanded portion of the digestive tube, between the esophagus below and the mouth and nasal cavities above and in front
Pleura - the serous membrane enveloping the lungs and lining the walls of the pleural cavity
Trachea - the air tube extending from the larynx into the thorax where it bifurcates into the right and left main bronchi

UNIT 7

GRAMAMR REVISION: COMPARISONS
Test your grammar (to be done before the class).

Use the proper word
1). This work is better … the other ones. 2). Harry is … good student as Jack. 3). This work is similar … mine. 4). This book is different … yours. 5). This bag looks … yours. 6). It's not … bad as you think.

Use the proper form of the word:
7). Our house is (small) than yours. 8). Jack's marks are (bad) than mine. 9).This book is (expensive) than that one. 10). You bike is (slow) than mine. 11). Dave is (tall) of all. 12). This is (good) restaurant in the town. 13). Out hotel is (comfortable) than yours. 14). This is (good) holiday I have ever had. 15). The blue coat is (cheap) than the others.

Use the keys to check your test:
1). Than, 2). As, 3). To, 4). From, 5). Like, 6). As, 7). Smaller, 8). Worse, 9). more expensive, 10). Slower, 11). The tallest, 12). The best, 13). More comfortable, 14). Best, 15). cheaper

If your score is13 or less revise the grammar using any grammar book.

KEY WORDS

Beat – when your heart beats it moves in a regular rhythm
Branch – to divide into two or more smaller, narrower, or less important parts
Chamber - an enclosed space especially in your body
Fist – the hand when the fingers are curled in towards the palm
Force (v) – to make someone or something move
Phase - a part of a process of development or growth
Pump (v) - to make liquid or gas move in a particular direction
Surround – to be all around something or someone on every side
Weight – how heavy something is

Language of Medicine: CARDIOVASCULAR SYSTEM

A vacuum cleaner, pump, dishwasher, mixer, food processor, coffee grinder are machines that work in a house.
Which of them can you find in the human body?
What's its job?

1. Read the texts. What questions can be asked to fill in the gaps:

HEART

The human heart weighs less than a pound, is roughly the size of the human fist, and lies in the (1) _____, just behind the breastbone and between the lungs.

The heart consists of (2) _____chambers: two upper chambers called (3) _____and two lower chambers called (4) _____.

The four chambers of the heart are separated by (5) _____. The interatrial septum separates the two upper chambers (atria), and the interventricular septum is a muscular wall which comes between the two lower chambers (ventricles).

The (6) _____is composed of three layers. The endocardium is (7) _____. The (8) _____ is the middle, muscular layer of the heart wall and is the thickest layer. The epicardium is a thin layer and forms (9) _____. The pericardium is a delicate membrane which surrounds the heart like a sac.

There are (10) _____ phases of the heartbeat. These phases are called (11) _____. During diastole, the atria of the heart fill with blood. At the end of diastole, the atria contract and force blood into the ventricles.

Systole begins when (12) _____. The ventricles contract and pump blood to (13) _____out of the heart. The right ventricle pumps blood to the lungs through the pulmonary artery, and the left ventricle pumps blood into the aorta and its branches.

(14) _____is the active contraction phase of the heartbeat, when the ventricles pump blood out of the heart. Diastole is the relaxation phase of the heartbeat, when (15) _____.

(From *THE LANGUAGE OF MEDICINE*)

1)

2)

3)

4)

5)

6)

7)

8)

9)

10)

11)

12)

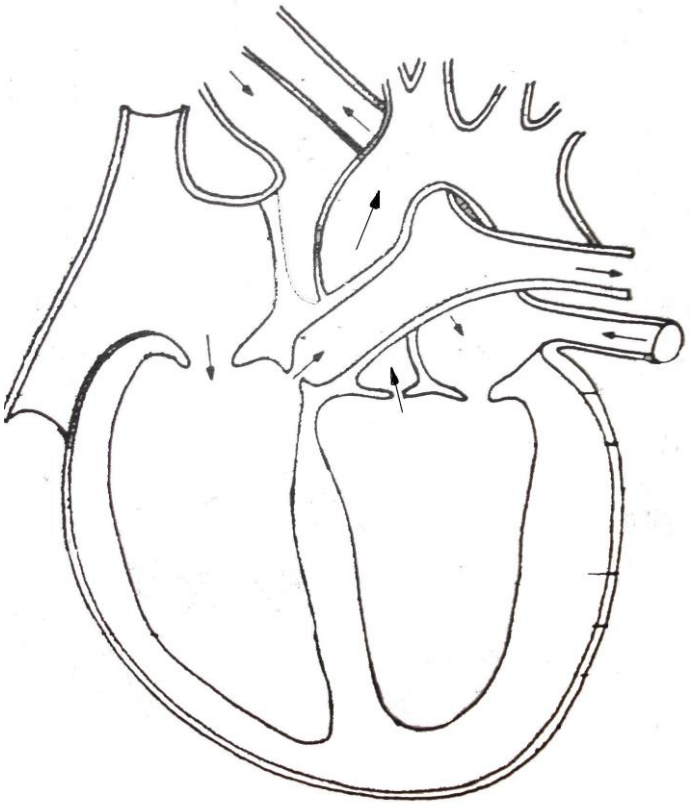
13)

14)

15)

2. Ask your teacher and fill in the gaps in the text.

3. *Write the structures mentioned in the text.*



4. .Study the prefixes:

Inter- between
De- without
Peri- surrounding
Endo- within
Epi- above

Explain their meaning of the terms:

Interatrial
Deoxygenated
Interventricular
Endocardium
Epicardium
Pericardium

5. Find the terms that have preserved their Latin form together with Latin plural.

6. Explain the meaning of the new words:

Atrium, ventricle, septum, endocardium, myocardium, epicardium, pericardium, systole, diastole.

7. True or false. Work in pairs to express your agreement and disagreement. Make the false statements true:

- The weight of the heart is about 350 g.
- The ventricles and aorta are the heart chambers.
- The ventricles are the upper chambers of the heart.
- The endocardium, myocardium, epicardium and pericardium are the layers of the heart.
- The atria pump the blood out of the heart.
- Diastole is a period of rest for the heart muscle.

8. Arrange the words to make statements about the heart:

1). The the about is of human weight heart 400 g.

2). The is located breastbone heart the behind.

3). The consists heart of atria ventricles and two two.

4). The of the is the inner heart called layer endocardium.

5). The is the of the muscular heart myocardium layer.

6). The known layer of heart is as epicardium the outer.

7). The throughout pumps heart the the body blood.

9. Compare the facts:

- Resting heart rate is usually between 72-80 beats per minute in women and 64-72 beats per minute in men. (slow/quick)

- The wall of the right ventricle is 2-6 mm thick. The wall of the left ventricle is 10-12 mm thick. (thick/thin)

- Systole lasts 0.29 seconds. Diastole lasts 0.54 seconds. (long/short)

- The pulse rate in women is 72-80 beats per minute. The pulse rate in man is 64-72 beats per minute. (slow/quick)

- In men the heart weighs 300 g. The weight of the heart in women is 200 g. (heavy)

- In fish the heart has two chambers: the atrium and ventricle. In reptiles the heart has two atria and one ventricle. In mammals and birds the heart has four chambers.

*Use **different from, similar to, the same as***

10. Use the proper forms of the words in brackets in the text abbot heart aging:

As people age, the heart tends to enlarge slightly, developing (thick) walls and slightly (large) chambers. During rest, the (old) heart functions in almost the same way as a (young) heart except the heart rate is slightly (low). However, during exercise, the (old) heart cannot increase the amount of blood pumped out as much as a (young) heart can.

The walls of the arteries and arterioles become (thick), and the space within the arteries expands slightly. Elastic tissue within the walls of the arteries and arterioles is lost. Together, these changes make the vessels (stiff) and (little) resilient.

Because arteries and arterioles become (little) elastic as people age, they cannot relax as quickly during the rhythmic pumping of the heart. As a result, blood pressure increases more when the heart contracts than it does in (young) people. Abnormally high blood pressure during systole with normal blood pressure during diastole is very common among (old) people.

Many of the effects of aging on the heart and blood vessels can be reduced by regular exercise. Exercise helps people maintain cardiovascular fitness as well as muscular fitness as they age. Exercise is beneficial regardless of the age at which it is started.

11. Study the combining forms:

cardio- heart
arterio- artery
phlebo- vein
veno- vein
-megaly – enlargement
-graphy – making a picture (usually x-ray)

Analyze the terms:

Cardiologist

Cardiopathy

Cardiocyte

Cardiac

Cardiomegaly

Cardiomyopathy

Cardiography

Cardiovascular

12. Fill in the gaps to make an abstract:

The heart is located in the _____. It has four _____: two _____ and two _____. A partition which is called_____ separates the chambers. The wall of the heart consists of three _____: _____ which is the inner layer, _____ which is the muscular layer and

_____ , the outer layer. The heart is surrounded by the _____. The two phases of the heartbeat are termed _____ and _____. _____ is the phase of relaxation, _____ is the phase of contraction.

Basic terminology

Aorta - a large artery of the elastic type which is the main trunk of the systemic arterial system.
Atrium - a chamber or cavity to which are connected several chambers or passageways
Diastole - normal postsystolic dilation of the heart cavities, during which they fill with blood
Endocardium - the innermost tunic of the heart
Epicardium - one of the three layers of tissue that form the wall of the heart
Heart - a hollow muscular organ which receives the blood from the veins and propels it into the arteries
Myocardium - the middle layer of the heart, consisting of cardiac muscle
Pericardium - the fibroserous membrane, covering the heart and beginning of the great vessels
Septum - a thin wall dividing two cavities or masses of softer tissue
Systole - contraction of the heart by which the blood is driven through the aorta and pulmonary artery to traverse the systemic and pulmonary circulations
Ventricle - a normal cavity, as of the brain or heart

UNIT 8

KEY WORDS

Cause – to make something happen
Clot – a thick almost solid mass formed when blood is dried
Cure – to make somebody who is ill well again
Distinguish – to be able to recognize and understand the difference between two similar things
Fluid – a liquid
Invade – to go into a place in large numbers, especially when you are not wanted
Loss – the fact of no longer having something you used to have
Mature - fully grown and developed
Maturity – the time when a person, animal or plant is fully grown or developed
Nutrient – a chemical or food that provideswhat is needed for plants or animals to live and grow
Offspring – someone's child or children
Prevent (v) – to stop something from happening
Prevention – the actions that you take in order to prevent something
Removal – the act of taking something away
Remove (v) – to take something away from the place where it is
Stain – to change the color of something by using a special chenmical
Transportation – the process of taking goods from one place to another
Vital – necessary in order to keep you alive
Waste – unwanted materials or substances that are left after you have used something

Language of Medicine: BLOOD

What does the heart do?
What is blood?
What body fluids do you know?

1. Read the text.
Match the statements with the paragraphs of the text:

1). Thrombocytes are responsible for blood coagulation.
2). There are several groups of leukocytes
3). Development of erythrocytes.
4). Blood carries different substances throughout the body.
5). Blood is composed of blood cells and fluid portion.
6). The cardiovascular system consists of the heart and blood vessels.

BLOOD

Blood is the body's transportation system. It transports nutrients and hormones, removes cellular waste products, assists in the regulation of body temperature, and aids in the removal and, in certain situations, the destruction of foreign substances and invading microorganisms. Blood plays an important role in the transmission, development, diagnosis, cure, and prevention of many diseases caused by microorganisms and other agents.

Blood is carried throughout the body by a series of vessels that, together with the heart, form the cardiovascular system. Three general types of blood vessels participate in circulating the blood

to body tissues. Arteries carry blood away from the heart and deliver it to the body tissues; veins transport blood back to the heart from body tissues; and the very thin capillaries form connections between arteries and veins. Capillaries allow the exchange of oxygen, nutrients, and cellular waste products between the blood and body tissues.

Blood consists of cellular elements in the fluid called plasma. The cellular components of blood (formed elements) include erythrocytes (red cells), leukocytes (white cells), and platelets.

Red blood cells or erythrocytes consist of a membrane that is closely associated with the iron-containing protein, hemoglobin. Since hemoglobin has a great attraction for oxygen, the red blood cell is specialized for the transport of this gas. An erythrocyte's life span generally ranges from 100 to 120 days. The gradual development of an immature red cell to maturity is accomplished in various stages. The most immature RBCs, which develop from stem cells in the bone marrow, are called erythroblasts. Erythroblasts divide within the bone marrow and their offspring develop into cells called normoblasts. The normoblast then divides and the cell it produces develop into reticulocytes. The last stage in red blood cell development is the progression from reticulocyte to erythrocyte.

White blood cells or leukocytes are grouped into two general categories, the granulocytes and agranulocytes. These blood cells are distinguished from one another by properties such as the presence or absence of granules, staining reactions, shape of the nucleus, and size. Normally, the numbers of these cells remain constant. However, in cases of certain diseases, decreases and increases of white blood cells occur.

Platelets, or thrombocytes, play an important role in the formation of blood clots. As long as the blood remains in blood vessels, it normally maintains liquid form. However, when blood comes out of a vessel, it changes within a short time to a soft, jelly-like mass, a blood clot or thrombus. Clot formation is a vital mechanism that prevents excessive blood loss from the body.

(From *THE LANGUAGE OF MEDICINE*)

2.Listen to the statements. Which of them are true (prove this with citations from the text). Correct the false ones.

3. What do the abbreviations **RBC, WBC** *stand for?*

4. What questions were asked to obtain the answers:

Q.:_____
A.: The blood transports gases, nutrients and hormones.

Q.:_____
A.: No, it is not the only function of the blood.

Q.:_____
A.: The three types of blood vessels are arteries, veins, and capillaries.

Q.:_____
A.: We call it plasma.

Q.:_____
A.: Deoxygenated blood.

Q.:_____
A.: They are erythrocytes.

Q.:_____

A.: They live for 100-120 days.

Q.:_____
A.: They change their number in case of disease.

Q.:_____
A.: The organism prevents blood loss with the help of thrombocytes.

5. Fill in the gaps:

The blood carries _____ throughout the body. The cardiovascular system consists of _____. Blood is composed of _____ and _____. _____ are called formed elements of blood. Erythrocytes are responsible for _____. Blood cells are formed in the _____. A blood clot or thrombus is _____. Granulocytes and agranulocytes differ in _____.

6. Arrange the words to make statements:

1). The the of and cardiovascular system heart arteries veins capillaries consists.
2). Plasma blood portion of a the is liquid.
3). Blood erythrocytes leukocytes elements platelets termed cellular of the and are.
4). Red stem marrow bone blood cells cells formed from are.
5). Erythrocytes oxygen transportation are for responsible.
6). An days lives one to from one hundred hundred and twenty erythrocyte.
7). The leukocytes change in of of case number disease may.
8). Clotting blood platelets take part in.
9). Blood blood protects organism from loss clotting the.

7. Study the combining forms:

myelo- bone marrow
hemo- blood
hemato- blood
erythro- red
leuko- white
granulo- granules
thrombo- clot
phago- eat
karyo- nucleus
nucleo- nucleus
morpho- shape
-globin – protein
-blast – immature cell
-poiesis – formation
-penia – deficiency
-lysis – breakdown
arterio- artery
veno – vein
phlebo- vein
vaso – vessel
angio - vessel

Analyze the medical words:

Hemolysis
Erythropenia
Erythropoiesis
Leukopenia
Erythroblast
Megakaryoblast
Megakaryocyte
Thrombocytopathy
Thrombocytopenia
Angiography
Angiology
Arterial
Cardiovascular
Angiopathy
Phlebography

8. Build medical words:

Lack (deficiency) of neutrophils _____, destruction of blood _____, immature monocyte _____, formation of the bone marrow _____, disease of platelets _____

9. In the text find the description of erythrocyte development. Draw the scheme:

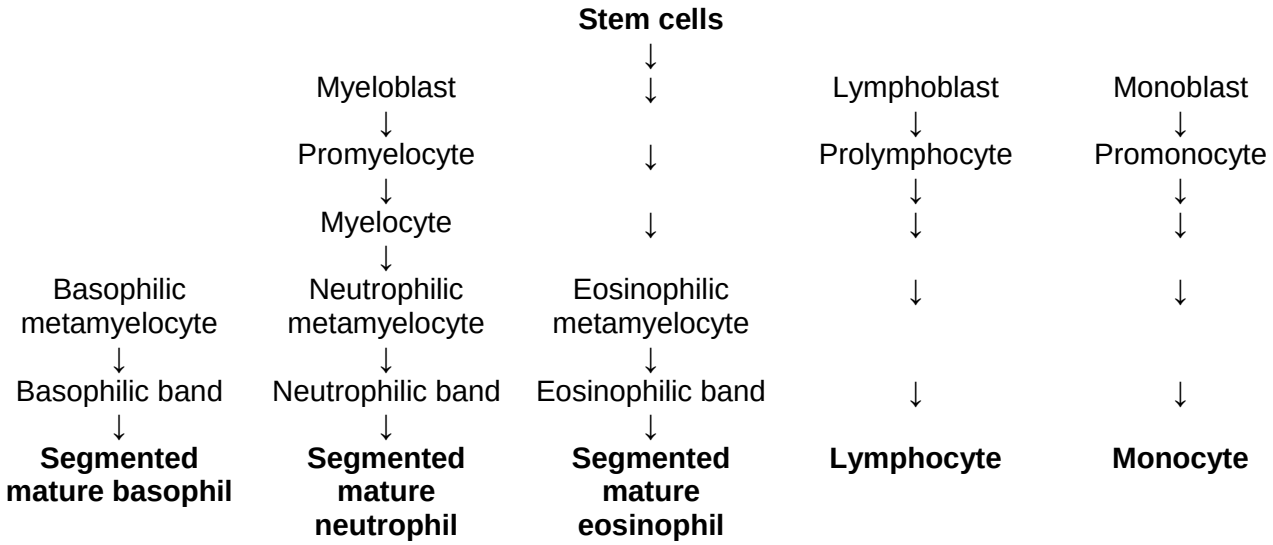
S_____ C _____→ E_____ → N_____ → R_____ → E_____

*10. Study the stages of a **platelet** development from an immature **stem cell** in the bone marrow. Fill in the gaps to describe the process of thrombocyte development:*

Stem cell → Megakaryoblast → Promegakaryocyte → Megakaryocyte → Platelet

Platelets _____ from the bone marrow _____ cells. The most _____ platelets _____ megakaryoblasts. Megakaryoblasts _____ into other immature cells called _____ . The promegakaryocyte then _____ cells _____ megakaryocyte. The _____ stage of clotting cell development is the progression from _____ to _____.

11. Study the chart. Analyze the meaning of the words determining various stages of leukocyte development. Describe the process of the development of leukocytes:



Basic terminology

Artery - a relatively thick-walled, muscular, pulsating blood vessel conveying blood in a direction away from the heart
Blood - the "circulating tissue" of the body; the fluid and its suspended formed elements that are circulated through the heart, arteries, capillaries, and veins
Erythrocyte - a mature red blood cell
Hemoglobin - the red respiratory protein of erythrocytes,
Hormone - A chemical substance, formed in one organ or part of the body and carried in the blood to another organ or part
Leukocyte - white blood cell.
Plasma - the fluid (noncellular) portion of the circulating blood, as distinguished from the serum obtained after coagulation
Platelet - an irregularly shaped disk-like cytoplasmic fragment of a megakaryocyte that found in the peripheral blood where it functions in clotting
Thrombus - a clot in the cardiovascular systems formed during life from constituents of blood
Vein - a blood vessel carrying blood toward the heart
Vessel - a structure conveying or containing a fluid, especially a liquid

UNIT 9

GRAMMAR REVISION: MODALS (CAN, MUST)

Test your grammar (to be done before the class).

Choose the proper form:

1). You must not (take, be taken) photographs in here. 2). Photographs must not (take, be taken) in here. 3). She must not (bring, be brought) the dog to her room. 4). Carbon dioxide must (pass, be passed) out of the cells. 5). The left ventricle must (pump, be pumped) the blood with great force.

Rewrite the sentences and questions using modals::

6). I'm not able to come to your party. 7). Is it possible for you to play basketball tonight? 8). Do you know how to use a computer? 9). It's impossible for us to answer this question. 10). It's not possible for me to help you. 11). I don't know how to play this game. 12). It is necessary for Paul to leave at 6.00 to catch this plane. 13). It is necessary for you to fill in an application form. 14). It isn't necessary for Mike to wait long for the bus. 15). I am sure he is at home. 16). I am sure it isn't Tuesday today. It's impossible. 17). I am sure we are early!

Use the keys to check your test.
1). take, 2). be taken, 3). bring, 4). pass, 5). pump, 6). I can't come …, 7). Can you play… 8). Can you use … 9). We can't answer …, 10). I can't help … 11). I can't play … 12). Paul must leave … 13). You must fill in , 14). Mike mustn't wait, 15). He must be at home. 16). I can't be Tuesday …, 17). We must be early!

If your score is 15 and less revise the grammar using any grammar book.

KEY WORDS

Absorb (v) – to take the liquid into itself from the surface or space around
Break down (v) – to change as a result of a chemical process
Chew (v) – to bite food several times before swallowing it
Crucial – very important
Digest (v) – to change food that you have just eaten into substances that your body can use
Eliminate (v) – to completely get rid of something
Extend (v) – to continue for a particular distance
Manufacture (to) – to produce
Release (v) – to let a substance flow out
Secrete (v) – to produce a substance
Solid – firm, hard
Swallow (v) – to make food or drink go down your throat and towards your stomach
Utilization – using something effectively

Socializing: ABILITIES AND OBLIGATIONS

1. Which of the following is done by the doctors:

Give drugs, prescribe drugs, write books, develop drugs, give injections, take temperature, measure the blood pressure, check the pulse, make films, operate on patients, stop bleeding, sing songs, dress the wound, do x-ray, care for the patients, deliver lectures, carry out tests.

Which of these can you do? What can your group mates do? (Ask them if necessary)

2. Study some milestones of the child development. Describe what a child can do at a definite age.

Age	Behavior
Birth	Sucks, clears airway, responds with crying to discomforts
4 wk	Moves head from side to side when lying on stomach; follows an object moved about 15 cm above face
6 wk	Smiles when spoken to, lies flat on abdomen
3 mo	Holds head steady on sitting; smiles at sound of caretaker's voice;
5 mo	Holds head steady when upright; sits with support; reaches for objects; recognizes people at a distance
7 mo	Sits without support; holds own bottle; looks for dropped object; responds to own name
9 mo	Sits well; stands holding on to someone or something; says “mama” or “dada”; waves bye-bye
12 mo	Walks by holding furniture or hands; stands for a few moments at a time; drinks from a cup; speaks several words
18 mo	Walks well; turns several book pages at a time; speaks about 10 words; partially feeds himself
2 yr	Runs well; climbs up and down stairs alone; puts on simple clothing; makes 2- or 3-word sentences
3 yr	Rides a tricycle; counts to 10 and uses plurals; recognizes at least 3 colors; feeds himself well
4 yr	Hops on one foot; copies a cross; washes hands and face
5 yr	Catches a ball; copies a triangle; recognizes 4 colors; dresses and undresses without help

(From THE MERCK MANUAL)

4. *Describe the duties of the students.*

5. *What is prohibited to the students?*

Language of Medicine: DIGESTIVE SYSTEM

Name five most important things you cannot live without.
How long can you live without them?

6. Study the pathway of food through the digestive tract:

MOUTH → PHARYNX → ESOPHAGUS → STOMACH → DUODENUM → JEJUNUM→ ILEUM → CECUM → COLON → SIGMOID COLON → RECTUM → ANUS

Describe the pathway of food through the digestive tract.

7. Read the text and fill in the gaps using the information of Ex. 6:

DIGESTIVE SYSTEM

The digestive system performs three functions. First, complex food material must be digested as it travels through the gastrointestinal tract. Second, the digested food must be absorbed into the bloodstream so that valuable substances can travel to the cells of the body. Within the cells sugars and fatty acids can be burned to release the energy. Third, the waste materials which cannot be absorbed by the intestine must be eliminated.

The digestive system, or gastrointestinal tract, begins with the _____, where food enters the body, and ends with the _____, where solid waste material leaves the body.

The cheeks form the walls of the oral cavity, while the lips form the opening to this cavity. The hard and soft palate form the roof of the mouth and separate the mouth from the pharynx. The tongue moves food around during mastication (chewing) and deglutition (swallowing).

Food passes from the mouth to the _____. Through the pharynx the food goes to the _____. This is a muscular tube extending from the pharynx to the _____.

The stomach prepares the food chemically and mechanically so that it can be received in the small intestine for further digestion and absorption into the blood.

The small intestine, or small bowel, extends from the pylorus to the first part of the large intestine. It has three parts _____, _____, _____, which is attached to the large intestine. The large intestine extends from the ileum to the anus. It is divided into four parts - _____, _____, _____, and _____. The rectum terminates in the _____.

Three important accessory organs of the digestive system are the liver, gallbladder, and pancreas. Although food does not pass through these organs, they play a crucial role in the proper digestion and absorption of nutrients.

The liver manufactures bile. The gallbladder stores and concentrates the bile for later use. After meals the gallbladder contracts forcing the bile to the duodenum. The liver has many other vital and important functions in the body. One of these is keeping the amount of sugar in the blood at a normal level. The liver can remove excess glucose from the bloodstream and store it. It can put sugar back into the bloodstream. Liver cells can make new sugar from amino acids

The pancreas manufactures and secretes pancreatic juice which helps to break down all types of foods. Special cells in the pancreas produce a hormone called insulin, which plays a role in the utilization of sugar by the body.

(From *THE LANGUAGE OF MEDICINE*)

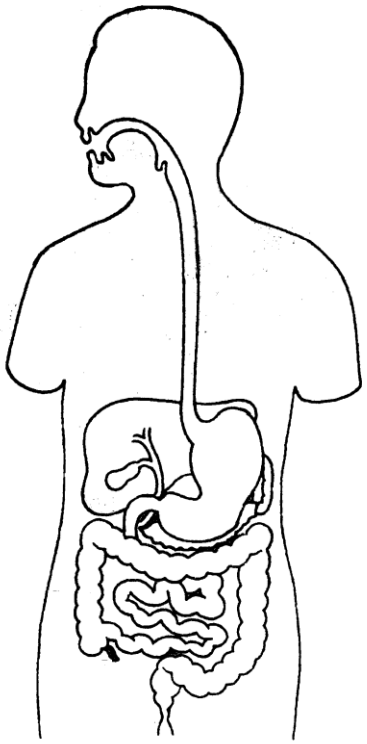
8. How do we call:

- wedge-shaped spongy organ that gets rid of toxins, regulates your blood sugar levels and produces bile;

- a J-shaped elastic sac, the widest part of your digestive system responsible for storing food, its chemical and mechanical processing and mixing it with juices secreted by its lining;

- a pistol-shaped organ behind the stomach which secretes digestion enzymes and hormones that control blood sugar levels

9. Find the structures described in the text in the picture:



10. Match a phrase in A with a phrase in B:

A	B
The esophagus	digestion, absorption of food and elimination of waste products.
The digestive system is responsible for	goes to the pharynx.
The stomach is the place	carries the food from the pharynx to the stomach.
From the oral cavity the food	for chemical and mechanical preparing of the food.
The food enters the organism	duodenum, jejunum, ileum.
The small intestine consists of	by the liver.
Cecum, colon, sigmoid colon and rectum are	through the liver gallbladder and pancreas.
The food does not go	through the mouth.
The bile is produced	in sugar breakdown.
Insulin takes part	the four parts of the large intestine.

11. Supply the words to the definitions:

- assimilation of food by the body;
- side of the face below the eye,
- organ of speech and taste,
- the tube that connects the stomach to the throat,
- important organ of body vitally concerned with metabolism, blood clotting and protein production,
- gland lying behind and below the stomach which produces ferments which are passed into the intestinal tract to help digestion; site of insulin production.

12. Are the statements correct?

- The only function of the digestive system is to assimilate the food.
- The other term for the digestive system is gastrointestinal tract.
- The mouth is the first division of the digestive system
- The esophagus is the place for mechanical processing of the food.
- The small intestine consists of cecum, colon, sigmoid colon and rectum.
- The liver, gallbladder and pancreas are the divisions of the intestine.
- The pancreas produces several substances important for digestion.
- The bile is produced by the gallbladder.

Work in pairs to act agreement and disagreement.

13. What questions can be asked to fill in the gaps:

1). In the process of digestion the tongue ….
2). Absorption of nutrients takes place in …
3). The digestive system ends …
4). The glands of the digestive system are …
5). The function of the gallbladder is …
6). Pancreatic juice aids in …

Work in pairs. Ask and answer the questions.

14. Study the combining forms:

tonsilo- tonsils
pharyngo – pharynx
laryngo- larynx
gastro- stomach
duodeno- duodenum
esophago- esophagus
hepato- liver
pancreato- pancreas
cholecysto- gallbladder

– itis is a suffix meaning "inflammation". Form the terms with the following meaning (use the dictionary to check their spelling):

Inflammation of tonsils _____/ throat _____/ larynx _____/ stomach _____/ duodenum _____/ esophagus_____/ liver_____/ pancreas_____/ gallbladder _____

15. Use the plan and write a brief summary of the text:

1). Oral cavity / begin
2). Go through / pharynx
3). Pass / esophagus
4). Stomach.
5). Small intestine / consist
6). Large intestine / compose
7). Accessory organs of the digestive system / not pass / digestion

Basic terminology

Anus - the lower opening of the digestive tract through which fecal matter is extruded
Bile - the yellowish brown or green fluid secreted by the liver and discharged into the duodenum
Bowel - *see* **Intestine**
Cecum - a blind-ended pouch at the junction of the small and large intestine
Colon - the division of the large intestine extending from the cecum to the rectum
Deglutition - the act of swallowing
Duodenum - the first division of the small intestine, about 25 cm or 12 fingerbreadths in length, extending from the pylorus to the junction with the jejunum
Esophagus - the portion of the digestive canal between the pharynx and stomach
Gallbladder - a pear-shaped receptacle on the inferior surface of the live; it serves as a storage reservoir for bile
Ileum - the third portion of the small intestine extending from the junction with the jejunum to the ileocecal opening
Intestine – the part of the alimentary canal that extends from the stomach to the anus
Jejunum - the portion of small intestine between the duodenum and the ileum
Large intestine - the portion of the digestive tube extending from the ileocecal valve to the anus; it comprises the cecum, colon, rectum, and anal canal
Lip - one of the two muscular folds with an outer mucosa that bound the mouth anteriorly
Liver - the largest gland of the body, lying beneath the diaphragm in the right hypochondrium and upper part of the epigastrium
Mastication - the process of chewing food in preparation for deglutition and digestion
Pancreas - an elongated lobulated retroperitoneal gland extending from the concavity of the duodenum to the spleen
Palate - the bony and muscular partition between the oral and nasal cavities
Pharynx - the upper expanded portion of the digestive tube, between the esophagus below and the mouth
Pylorus - the muscular tissue surrounding and controlling the outlet of the stomach
Rectum - the terminal portion of the digestive tube, extending from the rectosigmoid junction to the anal canal
Small intestine - the portion of the digestive tube between the stomach and the cecum; it consists of three portions: duodenum, jejunum, and ileum.
Stomach - a large sac between the esophagus and the small intestine, lying just beneath the diaphragm
Tongue - a mobile mass of muscular tissue covered with mucous membrane, occupying the cavity of the mouth and forming part of its floor

UNIT 10

GRAMMAR REVISION: PRESENT PARTICIPLE AND PAST PARTICIPLE

Test your grammar (to be done before the class).

Choose the proper word:

1. The pulmonary artery is the only artery (carrying, carried) deoxygenated blood. 2. Deoxygenated blood (entering, entered) the lung capillaries soon loses carbon dioxide. 3. The blood is pumped out of the left ventricle into the aorta (branching, branched) to carry blood all over the body. 4. The four chambers of the heart are separated by the walls (knowing, known) as septa. 5. The interventricular septum is a muscular wall (coming, come) between the two lower chambers. 6. The endocardium is a smooth layer of cells (lining, lined) the inferior of the heart. 7. The pericardium is a delicate membrane (surrounding, surrounded) the heart. 8. Air passes through the nasal cavities (lining, lined) with a mucous membrane. 9. The pharynx, (serving, served) as a common passageway for the food and air, divides into two branches in the hypopharyngeal region.

Use the proper form of the verb:

10. A flap of cartilage (attach) to the root of the tongue acts like a lid over the pharynx. 11. The trachea divides into two branches (call) bronchi. 12. The very thin wall allows for the exchange of gases between the alveolus and the capillaries (surround) it. 13. The blood (flow) through the capillaries accepts the oxygen from the alveolus. 14. The pleura is moistened with a serous secretion (facilitate) the movement of the lung. 15. The diaphragm is a muscular partition (separate) the thoracic from the abdominal cavity. 16. Diphtheria is an acute infectious disease of the throat (cause) by the presence of bacteria. 17. Croup is acute respiratory syndrome (characterize) by obstruction of the larynx 18. The amount of calcium in the blood is maintained by the parathyroid gland (secrete) a special hormone. 19. Long bones (find) in the legs and arms are very strong.

Use the keys to check your test:

1) carrying, 2) entering, 3) branching, 4) known, 5) coming, 6) lining, 7) surrounding, 8)serving, 10) attached, 11) called, 12) surrounding, 13) flowing, 14) facilitating, 15) separating, 16) caused, 17) characterized, 18) secreting, 19) found

If your score is 17 and less revise the grammar using any grammar book.

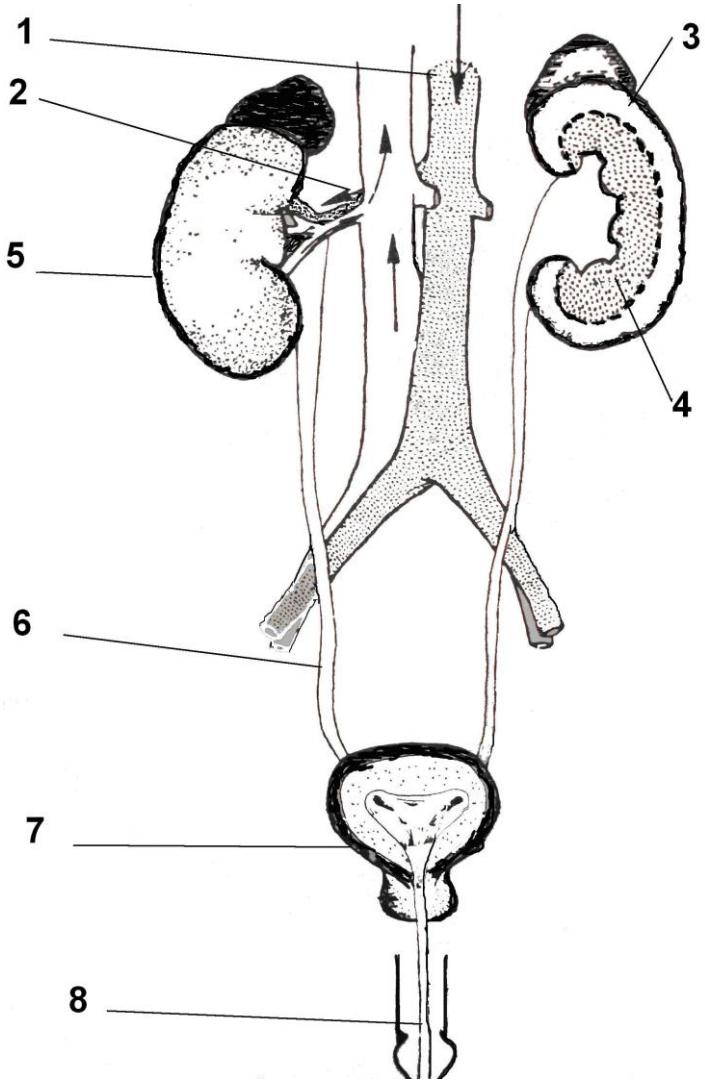
KEY WORDS

Branch (v) - divide into
Carbon - nonmetallic element (symbol C)that occurs in all living matter
Coil (v) - twist into a circle or spiral shape
Combine (v) - to join together
Discharge (v) - give or send out
Excrete (v) - discharge
Filtration - purifying a liquid by using a filter

Hydrogen - gas (symbol H) which combines with oxygen to form water
Nitrogen - gas (symbol N) forming about four firth of the atmosphere
Pressure - force exerted continuously or against something
Protein - body-building substance n such food as milk, egg, meat
Reservoir - a palace where waste is stored
Soluble - that can be dissolved

Language of Medicine: URINARY SYSTEM

1. Study the structure of the urinary system. Describe it.



1 – aorta, **2** – renal artery, **3** – cortex, **4** – medulla, **5** – kidney, **6** – ureter, **7** – urinary bladder, **8** - urethra

2. Read the text. Fill in the gaps using the picture.

URINARY SYSTEM

Food and oxygen are combined in the cells of the body to produce energy. Protein foods contain carbon, hydrogen, and oxygen plus nitrogen and other elements. The waste produced when proteins combine with oxygen is called nitrogenous waste. The body excretes it in the form of a soluble waste substance called urea. The major function of the urinary system is to remove urea from the bloodstream.

The organs of the urinary system are two _____, two _____, _____ _____, _____.

Two _____ are bean-shaped organs situated behind the abdominal cavity in the lumbar region of the spine. The kidneys consist of an outer _____ region and an inner _____ region. The kidneys also participate in regulating production of red blood cells and in maintaining normal blood pressure.

Two _____ are muscular tubes lined with mucous membrane. They carry urine from the kidney to the _____ _____.

_____ _____ is a hollow muscular sac in the pelvic cavity serving as a temporary reservoir for urine.

_____ is a membranous tube through which urine is discharged from the urinary bladder.

Blood is led to the kidneys from the _____ by way of the _____ arteries. Each renal artery branches into many small arteries called arterioles. Each arteriole in the kidney divides into very tiny, coiled small blood vessels (capillaries) shaped like a little ball and called a glomerulus. There are thousands of glomeruli in the cortex region of each kidney. This is the place for the first stage of urine filtration.

The kidneys also reabsorb all the material the body needs. This process takes place in the renal tubules. They reabsorb about 99 per cent of water filtered out of the glomeruli. A person's entire blood supply is filtered through the kidneys twenty to twenty five times a day.

(From *THE LANGUAGE OF MEDICINE*)

3. Listen to the questions and match them with the answers.
Arrange the answers in the order the information is presented in the text.

1). The process of reabsorption takes place in the tubules.
2). Urea is a waste material formed in the process of protein break down.
3). The urinary bladder is situated in the pelvic cavity.
4). The urinary system is responsible for urea extraction from the bloodstream.
5). The two regions of the kidneys are cortex and medulla.
6). The urinary system consists of two kidneys, two ureters, urinary bladder, and urethra.
7). The kidneys filter the waste material from the blood.
8). The kidneys are located in the lower back area.

4. Find the names of vessels mentioned in the text. What do they do?

5. Find the plural of ***glomerulus.***

6. Find the words with the following meanings:

Small artery

Small tube

Waste substance of protein metabolism

Muscular tubes carrying the urine from the kidney to the urinary bladder

Two small organs of the human body which remove waste products from the blood.

7. Arrange the phrases to make statements about the urinary system:

The kidneys / urea is a waste substance / the urinary system / of protein metabolism / is located in the pelvic cavity / the renal arteries / excretes urea from the organism / transport the urine from the kidneys to the urinary bladder / of two kidneys, two ureters, urinary bladder and urethra / the urinary system consists / filter the blood / regulate erythrocyte production and blood pressure / the ureters / the urinary bladder / carry the blood to the kidneys.

8. Study the combining forms:

uro- urinary, urea, urine
urethro- urethra
uretero- ureter
reno- kidney
nephro- kidney
-emia – blood condition

Analyze the words:

Hematuria
Uremia
Glomerulonephritis
Urologist
Urology
Nephritis
Tubule
Arteriole
Venule
Nephrectomy
Renal
Urography

9. Read the summary. Find and correct the mistakes:

The urinary system excretes the waste product of protein metabolism which is called urine. The urinary system consists of two kidneys, two urethras, a ureter and a gallbladder. The kidneys are located in the lower portion of the abdominal cavity. The external region of the kidneys is called cortex, the internal region is caller medulla. The blood is filtered in the glomeruli of the kidneys. 99% of the blood supply is filtered through the kidneys every day. The ureters connect the kidneys with the urinary bladder, which is located in the lumbar region.

10. Fill in the gaps:

1). The urinary system removes … from the … .
2). The … … is composed of two kidneys, two ureters, urinary bladder, and urethra.
3). The … are responsible for maintaining normal … pressure.
4). The ureters join the kidneys with the … … .
5). The renal arteries carry the … to the kidneys.
6). Each renal artery divides into … .
7). The first stage of urine filtration takes place in the … .

11. Explain the difference between:

1) ureter – urethra
2) urea – urine
3) gallbladder – bladder
4) glomeruli – tubules.

Basic terminology

Cortex - the outer portion of an organ, such as the kidney, as distinguished from the inner, or medullary, portion
Glomerulus - a tuft formed of capillary loops at the beginning of each nephric tubule in the kidney
Kidney - one of the two organs that excrete the urine
Medulla - any soft marrow-like structure, especially in the center of a part
Tubule - a small tube
Ureter - the thick-walled tube that conducts the urine from the renal pelvis to the bladder
Urethra - a canal leading from the bladder, discharging the urine externally
Urinary - relating to urine
Urinary bladder - a musculomembranous elastic bag serving as a storage place for the urine

UNIT 11

GRAMMAR REVISION: MAY, SHOULD

Test your grammar (to be done before the class).

Choose the proper word:

1). Look at the sky! It can/may/must rain. 2). It is impossible. It cannot/must not/ may not be the answer. 3). I suppose it is possible. I may/can/must come to your party. 4). I am well today. I may/can/must come to your party. 5). Sorry, I can't / may not come. I have a lot of work. 6). Surgery can/ may be indicated in this case.

Rewrite the sentences using modals:

7). It is possible that this disease is caused by a virus. 8). She is not able to come to the party. 9). He is unable to call you today. 10). It is possible to perform several operations. 11). I suppose the doctor knows how to treat you. 12). Antibiotics are able to correct this condition. 13). It is possible that this disease is caused by several factors. 14). It is possible that hypertension is the result of kidney disease.

Use the keys to check your test:

1) may, 2) cannot, 3) can, 4) can, 5) cannot, 6) may, 7) This disease can be caused, 8) She cannot come 9) He cannot call 10). Several operations can be performed. 11). I suppose the doctor can treat you. 12). Antibiotics can correct 13) This disease can be caused 14) Hypertension can be the result of

If your score is 12 and less revise the grammar using any grammar book.

KEY WORDS

Airway – the passage in your throat that you breathe through
Dilate (v) - become wider, larger
Elevate (v) - lift up
Fold (v) – to bend a pierce of paper, cloth etc by laying or pressing one part over another
Fold (n) – a line made in paper or material when you fold one part of it over another
Groove - long, hollow channel on the surface of hard material
Increase (v) - to make or become greater in size
Inhibit (v) - to hinder, to restrain
Monitor (v) - test and detect

Language of Medicine: NERVOUS SYSTEM

1. Study the diagram illustrating the structure of the nervous system. Describe the structure of the nervous system.

NERVOUS SYSTEM

CENTRAL NERVOUS SYSTEM		**PERIPHERAL NERVOUS SYSTEM**		
BRAIN	**SPINAL CORD**	**12 PAIRS OF CRANIAL NERVES**	**31 PAIRS OF SPINAL NERVES**	**AUTONOMIC NERVES**
				SYMPATHETIC NERVES
				PARASYMPATHETIC NERVES

2. Study how some structures of the nervous system are described in a medical encyclopedia.

What information about the terms can be found in the encyclopedia?

Which of the words came from Greek?

Which of the words came from Latin?

Which terms can be abbreviated?

Which of them have synonyms?

Find the words with the meaning "pertaining to hypothalamus (meninges, thalamus)".

*What is the singular of **meninges**?*

*What is the plural of **thalamus**?*

Mosby's Medical Encyclopedia for Health Professionals

autonomic nervous system the part of the nervous system that regulates involuntary vital function, including the activity of the cardiac muscle, smooth muscles, and glands. It has two divisions: The **sympathetic nervous system** accelerates heart rate, constricts blood vessels, and raises blood pressure; the **parasympathetic nervous system** slows heart rate, increases intestinal peristalsis and gland activity, and relaxes sphincters.

brain the portion of the central nervous system contained within the cranium. … Specialized cells in its mass of convoluted, soft, gray or white tissue coordinate and regulate the functions of the central nervous system.

cerebrospinal fluid (CSF) the fluid that flows through and protects the four ventricles of the brain, the subarachnoid space, and the spinal canal…

cranial nerves [Gk, *kranion,* skull; L, *nervus*],the 12 pairs of nerves emerging from the cranial cavity through various openings in the skull. … The cranial nerves originate in the base of the brain and carry impulses for such functions as smell, vision, ocular movement, pupil contraction, muscular sensibility, general sensibility, mastication, facial expression, glandular secretion, taste, cutaneous sensibility, hearing, equilibrium, swallowing, tongue movement, head movement, and shoulder movement. … Also called **cerebral nerves.**

hypothalamus [Gk, *hypo* + *thalamos*, chamber],a portion of the diencephalon of the brain, forming the floor and part of the lateral wall of the third ventricle. It activates, controls, and integrates the peripheral autonomic nervous system, endocrine processes, and many somatic functions, such as body temperature, sleep, and appetite. **…-hypothalamic,** *adj.*

meninges, *sing.* **meninx** [Gk ***menix*** membrane],the three membranes enclosing the brain and the spinal cord, comprising the dura mater, the pia mater, and the arachnoid. …**meningeal,** *adj.*

parasympathetic nervous system See **autonomic nervous system.**

spinal cord … A major component of the central nervous system. The cord conducts sensory and motor impulses to and from the brain and controls many reflexes. The cord is an extension of the medulla oblongata of the brain and ends caudally between the twelfth thoracic and third lumbar vertebrae, often at or adjacent to the disk between the first and second lumbar vertebrae…

spinal nerves the 31 pairs of nerves without special names that are connected to the spinal cord and numbered according to the level of the cord at which they emerge. They subdivide into lesser nerves that extend into the muscles and the skin of the posterior surface of the head, the neck, and the trunk as well as pass fibers to the skeletal muscles and the skin of the extremities. …Subdivisions of the anterior rami form complex plexuses, such as the brachial plexus, from which smaller nerves emerge to innervate the hand and most of the arm.

sympathetic nerve [Gk, *sympathein,* to feel with; L, *nervus*],any nerve of the sympathetic branch of the autonomic nervous system.

thalamus *pl.* **thalami** [Gk, *thalamos,* chamber] one of a pair of large oval organs forming most of the lateral walls of the third ventricle of the brain and part of the diencephalon. It translates impulses from appropriate receptors into crude sensations of pain, temperature, and touch. It also participates in associating sensory impulses with pleasant and unpleasant feelings, in the arousal mechanisms of the body, and in the mechanisms that produce complex reflex movements. **-thalamic,** *adj.*

ventricle [L, *ventriculum,* little belly] a small cavity, such as one of the cavities filled with cerebrospinal fluid in the brain, or the right and the left ventricles of the heart.

3. Match the structure of the nervous system and its function (Use medical encyclopedia if necessary):

Cranial nerves	The primary center for regulating and coordinating body activities
Spinal nerves	To control body temperature, sleep, appetite, and emotions such as fear and pleasure
Autonomic nervous system	To carry impulses between the brain and the head and neck
Sympathetic nerves	To surround the brain and spinal cord
Parasympathetic nerves	To protect the brain and spinal cord from shock
Brain	To contain cerebrospinal fluid
Ventricles of the brain	To carry messages between the spinal cord and the chest, abdomen, and extremities
Cerebrospinal fluid	To monitor the received sensory stimuli
Thalamus	1) To carry all the nerves which affect the limbs and lower part of the body, 2) to be the pathway for impulses going to and from the brain
Hypothalamus	To slow down heart rate, contract the pupils of the eye, lower blood pressure, stimulate peristalsis to clear the rectum, and increase the quantity of secretions
Spinal cord	To stimulate the body in times of stress and crisis
Meninges	To carry impulses from the central nervous system to the glands, heart, blood vessels, and the involuntary muscles

Describe the work of the structures of the central nervous system.

4. Read about the nervous system and fill in the gaps using the information of Ex. 1, 3:

THE NERVOUS SYSTEM

The nervous system can be classified into two major divisions: _____ and the _____. The central nervous system consists of _____ and _____. The peripheral nervous system consists of _____, which _____, and _____, which _____.

In addition to the spinal and cranial nerves, the peripheral nervous system consists of a large group of _____. This system of nerve fibers _____.

Some of the autonomic nerves are called _____ and others are called _____. The sympathetic nerves

_____, i.e., increase heart rate, dilate airways, increase blood pressure, stimulate the adrenal glands to secrete epinephrine (adrenalin), and inhibit intestinal contractions. Parasympathetic nerves _____.

The brain is _____. It has many different parts. The largest part of the brain is the cerebrum. The outer nervous tissue of the cerebrum, known as the cerebral cortex**,** is arranged in folds to form elevated portions, gyri, and grooves, also called sulci. All thought, judgment, memory, association, and discrimination take place within it. The spaces in the cerebrum called ventricles _____(CSF) which _____.

Two other important parts of the brain are the thalamus and hypothalamus. The thalamus _____. The hypothalamus _____.

The spinal cord _____.

The meninges are three layers of connective tissue membranes that _____. The outer layer is called the dura mater**.** The second layer is called the arachnoid membrane. The third layer of the meninges is called the pia mater.

(From *THE LANGUAGE OF MEDICINE*)

5. Which of the following was discussed in the text:

a) Two major divisions of the nervous system.
b) The function of each cranial nerve.
c) The number of nerves in the peripheral nervous system.
d) The work of the autonomic nervous system.
e) Stimulation of the body through the sympathetic nerves.
f) Relaxation of the body through the parasympathetic nerves.
g) The difference between the sympathetic and parasympathetic nerves.
h) The structure of a neuron.
i) Difference between the white matter and the gray matter.
j) The portions of the brain.
k) Functions of the cerebrum.
l) The location of the thalamus and hypothalamus.
m) The work performed by the cerebellum, pons, and medulla oblongata.
n) Main divisions of the vertebral column.
o) The membranes which cover the brain and the spinal cord.
p) Meningitis and its causes.

6. These are the questions which are not answered in the text. Ask for the necessary information using ***Can you tell me.., Could you tell me…, Would you mind telling me …***

1). How many cells does the nervous system consist of?
2). How do we call the substance which transmits nerve impulses?

3).What is the function of the cerebellum?
4).What structure connects the cerebellum and the cerebrum?
5).What centers can be found in the medulla oblongata?
6). What is the volume of CSF in the average adult?
7). What is an average length of the spinal cord?
8). How are the meninges called?
9). What are afferent nerves?
10). What do neurons do?

Work in pairs. Ask and answer the questions. The information for the answers can be found in the APPENDIX.

7. Write the plural of the following terms:

Gyrus, sulcus, meninx.

8. What do these abbreviations stand for:

CNS, CSF

9. Study the combining forms:

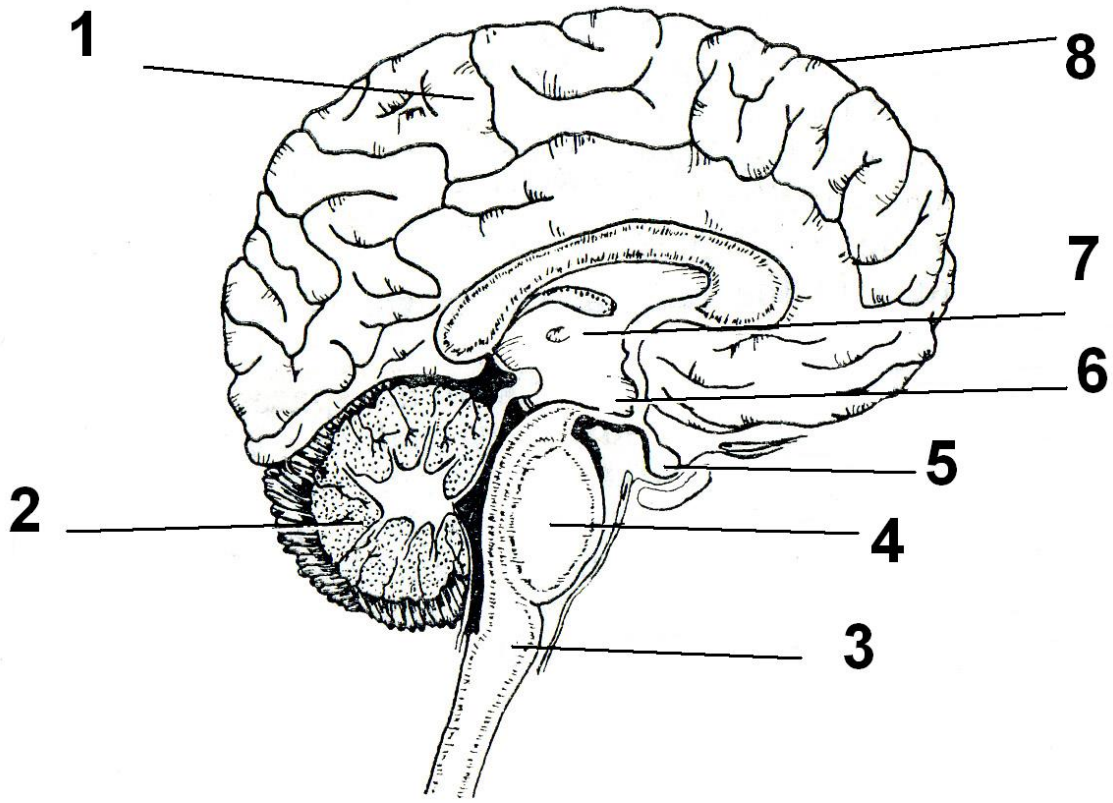
neuro- nerve
meningo- meninx
cerebro- brain
encephalo- brain
cranio – skull

Build medical words:

Inflammation of the brain _____, disease of the nervous system _____, inflammation of the meninges _____, pertaining to the skull _____, pertaining to the brain _____, inflammation of the nerve _____, science about the nervous system _____, specialist in diseases of the nervous system _____, nerve cell _____, formation of nervous system _____, surgical cutting of the skull _____.

10. Study the picture of the brain. Write a brief report about the brain.

1 – cerebrum
2 - cerebellum
3 – medulla oblongata
4 – pons
5 – pituitary gland
6 – hypothalamus
7 – thalamus
8 - membranes



11. Did you know?

The brain makes up about 2% of the body weight but requires about 20 % of the body's blood supply.

Basic terminology

Arachnoid membrane - a delicate fibrous membrane forming the middle of the three coverings of th central nervous system
Brain - the part of the central nervous system contained within the skull
Cerebrum - the largest portion of the brain, including mainly the cerebral hemispheres (cerebral cortex and basal ganglia)
Cranial - relating to the skull or head
Dura mater - a tough, fibrous membrane forming the outer covering of the central nervous system
Gyrus (pl. Gyri) - one of the prominent rounded elevations that form the cerebral hemispheres
Meninx (meninges pl.) - one of the membranous coverings of the brain and spinal cord
Nervous - relating to a nerve or the nerves
Pia mater - a delicate vasculated fibrous membrane firmly adherent to the glial capsule of the brain and spinal cord
Spinal cord - the elongated portion of the central nervous system, which is contained in the spinal or vertebral canal
Sulcus (pl. sulci) – one of the grooves or furrows on the surface of the brain, bounding the several convolutions or gyri
Thalamus - the large, ovoid mass of gray matter that forms the larger dorsal subdivision of the diencephalon;

Unit 12

GRAMMAR REVISION: PRESENT PERFECT

Test your grammar (to be done before the class).

Use the verbs to make sentences:

1). (your sister write) … to you yet? 2). She (never see) … Chinese films. 3). Someone (take) ….the book. 4). Viruses grow when they (invade) …. living cells. 5). When the tumor (not spread) … beyond the lymph nodes, surgery may be effective. 6). Experiments (show)… that certain viruses can cause cancer. 7). Some oncogenic viruses (already be investigated)…. 8). It (be demonstrated)… that viruses cause cancer in laboratory animals.

Use the proper form of the verb:

9). A great amount of information about cells (provide) by light microscopy. 10). During the past twenty years this method of treatment (become) very popular. 11). Blood vessels in the lungs absorb the oxygen which (inhale) from the air. 12). In previous chapters we (discuss) important functions of many organs. 13). The theoretical principles of computed tomography (know) since 1917.14). Since 1924 the accuracy of urography (grow).

Use the keys to check your test:

1) Has your sister written, 2) She has never seen, 3). Someone has taken 4). Viruses grow when they have invaded 5). When the tumor has not spread 6). Experiments have shown that 7). Some oncogenic viruses have already been investigated 8). It has been demonstrated that, 9) has been provided, 10) has become, 11) has been inhaled, 12) have discussed, 13) have been known, 14) has grown

If your score is 12 and less revise the grammar using any grammar book.

KEY WORDS

Bend (v) - become curved or angular
External - situated on the outside
Focus (v) - come together, concentrate
Initiate (v) - set working
Internal - situated on the inside
Ray - line, beam of light, heat, energy
Respond (v) - react to
Sense - one of the special powers of the body by which a person is conscious of things
Sensitive - quickly or easily receiving impressions
Strike (v) - hit, give a blow
Wave – the form in which some types of energy (light or sound) move

Language of Medicine: SENSE ORGANS

1. Check your knowledge:

How many senses do we have?
What are they?
What organs help us to do it?

2. Read the text. Which of the sense organs are described in it:

SENSE ORGANS

The eye and the ear are sense organs. Their sensitive cells may be activated by a stimulus in the external or internal environment. The sensitive cells in the eye and ear respond to the stimulus by initiating a series of nerve impulses alone sensory neurons which lead to the brain.

The eye consists of the eyeball and accessory structures (eyebrows, eyelids, conjunctiva, lachrymal apparatus). Light rays enter the dark center of the eye, the pupil after they have passed through a mucous membrane called the conjunctiva and a transparent fibrous membrane called the cornea. The cornea bends, or refracts, the rays of light so that they are focused on the sensitive receptor cells of the retina (called rods and cones) in the posterior region of the eye. The sclera, or white of the eye, is a supportive tissue.

The iris is the colored portion of the eye which surrounds the pupil. Two sets of iris muscles respond to light by contracting. The lens (which lies posterior to the iris) aid in further refracting the light rays.

Light energy, when it has focused on the retina, causes a chemical change in the rods and cones, initiating nerve impulses which then travel from the eye to the brain.

The ear can be divided into three separate regions – outer ear, middle ear, and inner ear.

Sound waves enter the ear through the auricle. Sound waves travel through the auditory canal and strike a membrane between the outer and middle ear. This is the tympanic membrane, or eardrum. As the eardrum vibrates, it moves three small bones which conduct the sound waves through the middle ear. These bones are the malleus, the incus, and the stapes.

Sound vibrations reach the inner ear also called the labyrinth. Tiny cells receive vibrations and relay the sound waves to auditory nerve fibers which end in the auditory center of the cerebral cortex.

(From *THE LANGUAGE OF MEDICINE*)

3. These are the structures of the eye

PUPIL, CONJUNCTIVA, CORNEA, SCLERA, IRIS, LENS, RETINA

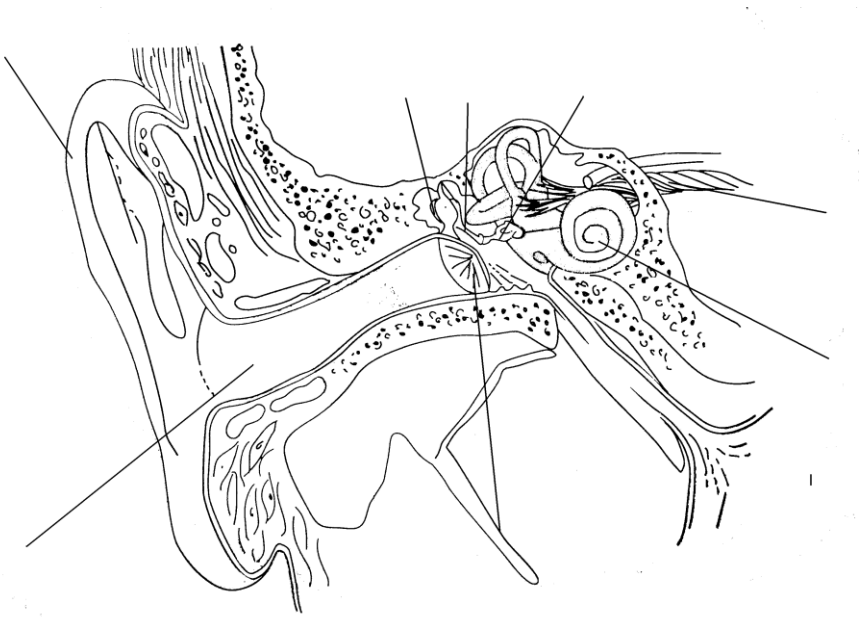
Use the text to match their name with the definitions:

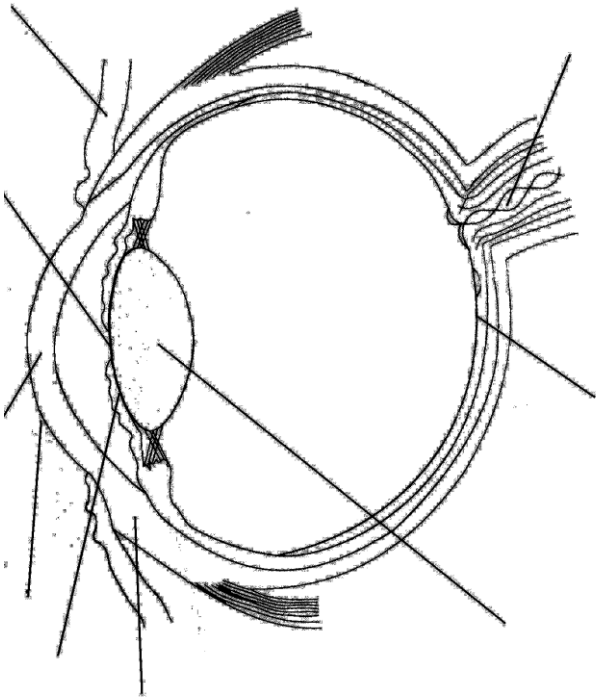
a) a pigmented circular contractile disc around the pupil
b) part of the eye that receives the image and which is connected to the brain by the optic nerve
c) a mucous membrane lining of the eyelid and outer surface of the exposed portion of the eyeball
d) white of the eye
e) transparent biconvex structure which has the ability of bending light rays to bring them to the retina
f) the window of the eye through which light passes to the lens and the retina
g) a membrane covering the eye and lying beneath the conjunctiva

4.Correct the mistakes in the scheme using the text. Describe the passway of signals in the eye:

PUPIL → CONJUNCTIVA → RETINA → OPTIC NERVE → CORNEA → BRAIN

5. Study the picture and write the names of the structures, described in the text.





6. Arrange the words in the statements:

a) The the ear hearing organ is of.

b) The ear ear ear ear of outer middle consists inner and.

c) The the the to is formed by entrance ear auricle.

d) Sound eardrum makes the vibrate.

e) In middle small ear bones pass the sound three waves the.

f) The the between and inner middle is called partition tympanic membrane ear.

g) The maze a middle resembles ear.

7. Draw the pathway of signals in the ear:

A_____ → a_____ c_____→
t_____m_____ → m_____, i_____,
s_____ → l_____ → a_____ n_____ →
a_____ c_____

Describe how the sound signals travel in the ear.

E.G. The sound waves enter the acoustic canal after they have passed the auricle.

8. Build questions:

What function / eye and ear / perform?
How / dark center of the eye / call?
What / cornea / do?
What / iris / surround?
How / the shape and thickness of lens / change?
What / rods and cones?
What / sound waves / enter the ear through?
Where / eardrum / locate?
What / tympanic membrane / move?
Where / auditory center / locate?

Work in pairs. Ask and answer the questions.

9. Change ONE word to make the statements true:

1). The eye and the brain are sense organs.
2). Impulses in the external and internal environment activate the sensitive cells of the sense organs.
3). The function of the conjunctiva is light refraction.

4). The cornea supports the structures of the eye.

5). The pupil is the colored portion of the eye.

6). The ear ends with the auricle.

7). The tympanic membrane is located between the middle and inner ear.

8). The malleus, the incus and the stapes absorb the sound waves in the middle ear.

9). The hearing center is located in the brain cortex.

10). "Eardrum" and "labyrinth" are synonyms.

11). Nerve impulses from the eye are carried to the brain through the visual nerve.

10. Study the combining forms:

ophthalmo- eye
oto- ear
tympano- tympanic membrane
audio- hearing

-scope – instrument for visual examination
-meter – instrument for measurement
-plasty – surgical repair

Match the definitions and the terms:

Inflammation of the ear	Ophthalmologist
Science about the eye	Tympanitis
Specialist in eye diseases	Ophthalmoscope
Inflammation of the eardrum	Otitis
Instrument to examine the eye	Audiometer
Instrument to measure hearing	Ophthalmology
Surgical repair of the eardrum	Otologist
Ear specialist	Otology
Branch of medicine dealing with the ear	Tympanoplasty

11. Fill in the gaps to make a summary:

The eye and the ear are _____. Their sensitive _____ to various stimuli and send _____ to the brain. The _____ is the dark center of the eye. The _____ refracts the rays. The _____ is a supportive tissue. The _____ is the colored portion of the eye around the pupil. The light is focused on _____ and _____. A chemical change in the rods and cones _____ nerve impulses which go from the eye to the brain.

The ear can be divided into three _____ – outer ear, middle ear, and inner ear. _____ enter the ear through the _____. They reach _____ membrane. The vibrations of the eardrum _____ three small bones which conduct the sound waves. Sound _____ reach the _____ ear (the

labyrinth). Tiny cells transmit the sound waves to _____ which lead to the cerebral cortex.

12. Did you know?

Dark pigment cells of the iris are variously arranged in different people to produce different colored irises. The pigment is absent in albinos. In blue eyes the pigment cells are confined to the posterior surface of the iris, but in gray eyes, brown eyes, and black eyes the pigment cells appear in the anterior layer of epithelium and in the stroma.

Basic terminology

Conjunctiva - the mucous membrane investing the anterior surface of the eyeball and the posterior surface of the lids
Cornea - the transparent tissue constituting the anterior sixth of the outer wall of the eye
Ear - the organ of hearing
Eye - the organ of vision
Impulse - the action potential of a nerve fiber
Iris - the anterior division of the vascular tunic of the eye, a diaphragm, perforated in the center (the pupil)
Posterior - denoting the back surface of the body. Often used to indicate the position of one structure relative to another, i.e., nearer the back of the body
Pupil - the circular orifice in the center of the iris, through which the light rays enter the eye
Receptor - any one of the various sensory nerve endings in the skin, deep tissues, viscera, and special sense organs
Sclera - a portion of the fibrous tunic forming the outer envelope of the eye
Stimulus - that which can elicit or evoke action (response) in a muscle, nerve, gland or other excitable tissue

Unit 13

GRAMMAR REVISION: PAST FORM OF THE VERB TO BE

*Use the proper form of **be**:*

1). Yesterday I … at hospital. 2). He … a student now. 3). They … in London in 1999. 4). It … Monday today. 5) Paranasal sinuses … hollow cavities within the skull. 6) She … taken to the hospital some days ago. 7) He … operated on last Tuesday.

Mark correct sentences:

8). a) Mary is at school now. - b) Mary was at school now.
9). a) Chris were in France in summer. - b) Chris was in France in summer.
10). a) It was cold yesterday. - b) It is cold yesterday.
11). a)The coffee are disgusting. - b) The coffee was disgusting.
12). a) The disease was caused by mineral dust. - b) The disease were caused by mineral dust.

Each sentence has a mistake. Find and correct it:

13). We was at school. 14). They were students now. 15). The books not were expensive. 16). His disease caused by smoking. 17). She were ill with pneumonia. 18). His disease was preceded by common cold? 19). Is she was in Rome last year? 20). The patient not was advised to take antibiotics.

Use the keys to check your test:

1) was, 2) is, 3) were, 4) is, 5) are, 6) was, 7) was, 8) a, 9) b, 10) a, 11) b, 12) a,
13). We ~~was~~ **were** at 14). They ~~were~~ **are** 15). The books **were** not ~~were~~ 16). His disease **was** caused 17). She ~~were~~ **was** ill. 18). **Was** his disease preceded 19). **Was** ~~Is~~ she ~~was~~ in Rome 20). The patient **was** not ~~was~~ advised

If your score is 18 and less revise the grammar using any grammar book.

KEY WORDS

Accelerate (v) - increase the speed
Constrict (v) - to make smaller
Deficiency - the state of being short of, less than what is needed
Diminish (v) - make smaller
Female - of women
Male - of men
Proper - right, correct
Rate - number of something in relation to a period of time
Release (v) - to allow to go, to set free
Reproduction - the act or process of producing young animals or plants
Support (v) - to hold up, to keep in place

Socializing: SPEAKING ABOUT HISTORY

1. Task for Student A. (Task for Student B. can be found in the APPENDIX).

Arrange the events in the chronological order:

___Treatment of anemia with iron
___Heart transplantation
___Contact lens
___Tooth filling
___Diagnostic x-rays
___Discovery of chloroform
___Dialysis machine
___Laser eye surgery

Work in pairs. Discuss your results with your group mate. Express your agreement or disagreement with the choice of your partner. Tell more about the date, country and author using the information:

Results of your partner

1. Cataract operation – 500 BC India
2. Tracheotomy – 1825 Pierre Bertonneu
3. Smallpox vaccine – 1879
4. Open heart surgery – 1893 Daniel Williams
5. Chemotherapy – 1910 Paul Ehrlich
6. Discovery of DNA structure – 1953 Crich and Watson
7. Measles vaccine – 1965
8. Test tube baby (in vitro fertilization) – 1978 birth of Louise Brown

*2. Work in groups. Group A.: Ask group B. about the date of the most significant discoveries in medicine in the 20th century. Use**: to discover, to invent, to transplant, to develop, to work out, to perform, to make:***

Blood groups
Higher nervous activity
Syphilis diagnosis
Vascular suture joining vessels
Insulin
Penicillin
Use of neutrons to treat cancer
Streptomycin (drug against tuberculosis)
Heart-lung machine
Vaccine against poliomyelitis
Contraceptive pills
Organ transplantation
Computed tomography
Human immune deficiency virus
Hepatitis B vaccine
Clone of a ship

Group B. To answer the questions use the information from the APPENDIX.

Which of the events is the most impressive?

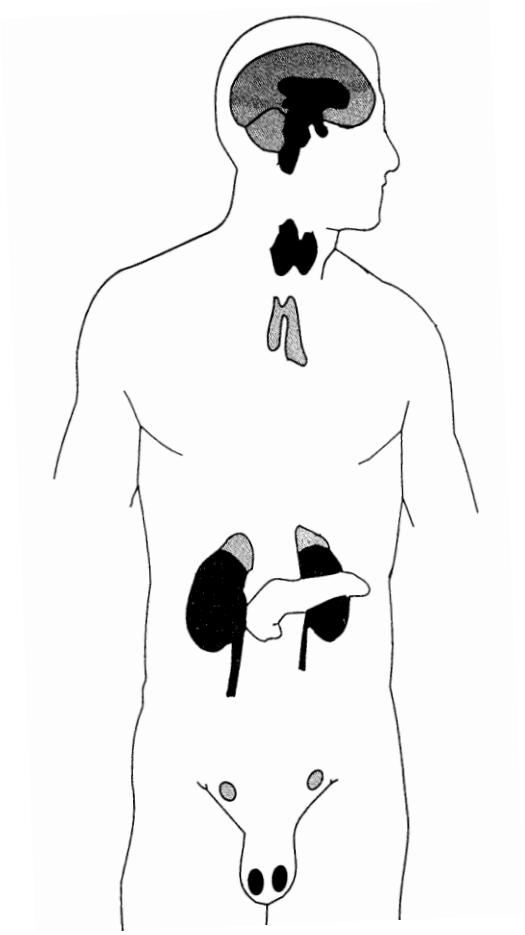
Language of Medicine: ENDOCRINE SYSTEM

3. Which of the following are endocrine glands?

Thyroid gland, sweat gland, parathyroid gland, adrenal gland, salivary gland, pancreas, sebaceous gland, pituitary gland, ovary, testes, pineal gland, thymus gland, liver

Check your answers using the text.

4. Read the text once against and write the names of the endocrine glands:



THE ENDOCRINE SYSTEM

The endocrine system is composed of glands, which release specific chemical substances (hormones) directly into the bloodstream. These hormones can regulate the many functions of an organism. The endocrine glands are thyroid gland; parathyroid glands; adrenal glands; pancreas; pituitary gland; ovaries in female; testes in male; pineal gland; thymus gland.

The thyroid gland is located on either side of the trachea. The hormone secreted by the thyroid gland is called thyroxin. It supports the metabolic rate in the body. Injections of thyroxin will raise the metabolic rate, while removal of the thyroid gland, diminishing thyroxin content in the body, will result in a lower metabolic rate, heat loss, and poor physical and mental development.

The parathyroid glands are located behind the thyroid gland. Parathyroid hormone regulates the amount of calcium in the blood. Deficiency of parathyroid hormone is associated with muscular spasms.

The adrenal glands are situated one on top of each kidney. The adrenal cortex secretes three types of steroid hormones: 1. Mineralocorticoids (they regulate the amount of mineral salts) 2. Glucocorticoids (these hormones have an important influence on the metabolism of sugars, fats, and proteins) 3. Androgens, estrogens, and progestins (hormones which maintain the secondary sex characteristics and are necessary for reproduction).

The adrenal medulla secretes two types of catecholamine hormones: epinephrine (adrenaline) which increases cardiac activity, dilates bronchial tubes, and stimulates the production of glucose from a storage substance called glycogen and norepinephrine (noradrenaline) which constricts vessels and raises blood pressure.

The pancreas is located behind the stomach. The cells in the pancreas which produce hormones are called the islets of Langerhans. The islets of Langerhans produce insulin and glucagon. Both of these hormones play a role in the proper metabolism of sugars in the body.

The pituitary gland (hypophysis) is located at the base of the brain and composed of two lobes, adenohypophysis and neurohypophysis. The hormones of the adenohypophysis are pituitary growth hormone (this hormone acts on bone tissue to accelerate its growth in the body), thyroid-stimulating hormone (stimulates the growth of the thyroid gland and its secretion of thyroxin), adrenocorticotropic hormone (stimulates the growth of the adrenal cortex and increases its secretion of steroid hormones), gonadotropic hormones (influence the growth and hormone secretion of the ovaries in females and testes in males). The neurohypophysis secretes two important hormones: antidiuretic hormone (stimulates the reabsorption of water by the kidney tubules and can increase blood pressure by constricting arterioles), oxytocin (stimulates the uterus to contract during childbirth).

The ovaries are located in the lower abdominal region of the female. The ovarian hormones are estrogen and progesterone. Estrogen is responsible for the development of secondary sex characteristics. Progesterone is responsible for the preparation and maintenance of the uterus in pregnancy.

The testes produce the male sex cells, spermatozoa, as well as the male hormone called testosterone which stimulates the growth of secondary sex characteristics in the male.

(From *THE LANGUAGE OF MEDICINE*)

5. Match the words and their definitions

islet of Langerhans	ductless glands that secrete directly into the bloodstream
hormones	two small female organs that produce ova
endocrine glands	glands that have ducts and that deliver their secretions to a specific location
pituitary gland	outer layer of the brain and other organs
exocrine glands	endocrine cells of the pancreas
cortex	small gland at the base of the brain which affects all the other glands of the body
ovary	chemical substances originating in a ductless gland and conveyed through the bloodstream to another part of the body

6. Listen to the statements. Are they true or false? Make the false sentences true.

7. Write out the hormones produced by the endocrine glands:

Thyroid gland:

Parathyroid gland:

Adrenal glands:

Pancreas:

Hypophysis:

Ovaries:

Testes:

Describe hormone production. Use: ***secrete, produce, manufacture, supply, release***.

8. Write out the information about the action of the following hormones:

Thyroxin

Parathyroid hormone

Insulin

Adrenaline

Mineralocorticoids

Pituitary growth hormone

Gonadotropic hormone

Progesterone

Testosterone

Describe the action of the hormones. Use: ***regulate, be responsible, play a role, stimulate.***

9. You want to know:

1) the difference between the endocrine and exocrine glands;
2) what happens if the amount of parathyroid hormone is decreased;
3) which endocrine glands are different in men and women;

4) which endocrine glands produce several hormones;

5) the location of endocrine glands;

6) the gland which regulates the work of the other endocrine glands.

What questions can be asked.
Work in pairs. Ask and answer the questions.

10. Write the beginning of the sentences:

1). _____ specific chemical substances released by endocrine glands.

2). _____ secreted by the thyroid gland.

3). _____ on the dorsal surface of the thyroid gland.

4). _____ can be caused by lack of parathyroid hormones.

5). _____ a role in the metabolism of sugars, fats, proteins.

6). _____ regulate sugar metabolism.

7). _____ the two lobes of the pituitary gland.

8). _____ responsible for uterus contractions during delivery of a baby.

9). _____ development of secondary sex characteristics in women.

10). _____manufactured by the testes.

11). _____ above each kidney.

12). _____ in the small pelvis.

11. Study the combining forms:

adeno- gland
endocrino- endocrine
thyro- thyroid
adreno- adrenal gland
pancreato- pancreas
pancreo- pancreas
ovario- ovary
crino- secrete
endo- inside
exo- outside
-necrosis - death

Explain the meaning of the words:

Endocrine

exocrine

adenitis

adenopathy

endocrinopathy

thyroidectomy

thyroiditis

thyrolingual

adrenopathy

pancreatonecrosis

pancreatopathy

pancreatitis

12 .Read about hypophysis. Use the verbs in the proper form:

The hypophysis also (call) the pituitary gland, (be) a small, pea-shaped gland (locate) at the base of the brain and (compose) of two distinct lobes. The anterior lobe (know) as the adrenohypophysis and (be) composed of glandular tissue. The posterior lobe (call) the neurohypophysis. The hypothalamus (be) a region of the brain which (be) close to the pituitary gland. It (believe) that special hormones from the hypothalamus (control) secretory activities of the pituitary gland.

Basic terminology

Adrenal - near or upon the kidney; denoting the suprarenal (adrenal) gland
Endocrine - secreting internally, most commonly into the systemic circulation
Exocrine - denoting glandular secretion delivered to an apical or luminal surface
Ovary - one of the paired female reproductive glands containing the ova or germ cells
Pituitary - relating to the pituitary gland
Testis - one of the two male reproductive glands, located in the cavity of the scrotum
Pineal - pertaining to the pineal body.
Thymus - a primary lymphoid organ, located in the superior mediastinum and lower part of the neck, that is necessary in early life for the normal development of immunological function
Thyroid - denoting a gland (thyroid gland) and a cartilage of the larynx (thyroid cartilage) having such a shape

Unit 14

GRAMMAR REVISION: PAST SIMPLE

Test your grammar (to be done before the class).

Write questions to get the missing information:

1). The pain aggravated at ___ 2). Computed tomography showed ___ in right hemisphere. 3). Three weeks later a rash developed on ___. 4). The drug ___ and ____. 5). The patient developed ___.

Choose Present or Past:

6). Blindness (result) because the disease was not treated. 7). This condition usually (result) in blindness. 8). This tumor usually (occur) on the upper side of the face. 9). Melanomas (result) from pigment-producing cells. 10). Melanomas usually (occur) on the face, neck and extremities. 11). Two days ago the patient (develop) fever, headache, and cough. 12). The disease often (affect) gums and tongue. 13). Treatment frequently (consist) of long-term antibiotic use. 14). This disease commonly (occur) on the knee, elbow, or scalp. 15). First signs of the disease (appear) yesterday.

Find and correct the mistakes:

16). One month later the symptoms did not changed. 17). Did he lost consciousness? 18). Was the disease affected the voluntary muscles of the body? 19). The first signs of the disease appear last night. 20). The disease beginned in the childhood.

Use the keys to check your test:

1) What time did the pain aggravate? 2) What did computed tomography show? 3) Where did a rash develop? 4) What did the drug do?, 5) What did the patient develop? 6) resulted 7) results 8) occurs 9) result 10) occur 11) developed 12) affects 13) consists 14) occurs 15) appeared 16). One month later the symptoms did not ~~changed~~. **change**. 17). Did he ~~lost~~ **loose** 18). ~~Was~~ Did the disease ~~affected~~ **affect** 19). The first signs of the disease **appeared** 20). The disease ~~beginned~~ began

If your score is 18 and less revise the grammar using any grammar book.

KEY WORDS

Contain (v) - have or hold within itself
Design (v) - to plan
Eject (v) - to send out
Locate (v) (be located) - be situated
Nourish (v) - keep alive and well with food
Pear-shaped – having a shape of a pear
Provide (v) - give, supply what is needed
Puberty - stage at which a person becomes physicianly able to become a parent
Result in (v) - bring about, have as a consequence

Rupture – an occasion when something suddenly breaks apart or bursts
Rupture (v) - to break or burst
Similar - of the same sort
Union – joining two or more things together
Unite (v) – to joint two or more things together

Socializing: CURRICULUM VITAE

When you apply for a job or a course of studies you can be asked to submit your CV (CURRICULUM VITAE or RESUME).

1. Read Peter's CV. Answer the questions:

CURRICULUM VITAE

Name	Peter Müller
Address	22 Lüdwigstraße Calw, Germany
Telephone	01534 23675
Date of birth	15 March 1970
Education	
1977-1989	Secondary school in Oberkirch (Germany)
1989-1996	Oxford University Medical School (BM)
Languages	English (fluent), French (fluent), Spanish (fluent)
Computing skills	Microsoft Word Microsoft Excel
Work experience	
2001-present time	Surgeon, Cardiology Department, Calw, Germany
1999-2001	Residency in cardiosurgery (Salzburg Hospital, Salzburg, Austria)
1996-1999	Internship in surgery (London School of Medicine)
Interests	Tennis, golf
Publications	10 articles
Participation in professional associations	European Association of Cardiosurgery

How old is he?
Is he English?
Where is he from?
What's his job?
How long did it take him to become a surgeon?
How long was the course of studies leading to bachelor's degree?
Where did he receive BM?
Where does he live?
What does he like to do in his free time?
How many articles for scientific journals has he written?
Can he operate a computer?

Ask similar questions to your group mate. Answer them.

2. Write your CV.

CURRICULUM VITAE

Name

Address

Telephone

Date of birth
Education

Languages

Computing skills

Work experience

Interests

Publications

Participation in professional associations

3 .Read the CV of a well-known Ukrainian anatomist V.P. Vorobyov (1876-1937). Write a report about the life of V.P. Vorobyov.

Name	Vladimir Petrovych Vorobyov
Date of birth	15 July 1876
Place of birth	Odessa
Education	
1897-1903	Kharkiv University (Medical Faculty)
Scientific grades	
1908	Doctor of science (medicine)
Work experience	
1921-1937	Kharkiv Medical Institute, head of Anatomy Department
1920-1921	Professor, Sofia University (Bulgaria)
1918-1920	Kharkiv University, professor of Anatomy Department
1916-1917	Women's Medical Institute (Kharkiv), professor
1910-1916	Women's Medical Institute (Kharkiv), lecturer
1908-1910	Kharkiv University, lecturer (Human Anatomy)
1903-1907	Kharkiv University, prosector
Publications	5-volume Atlas on Human Anatomy published in 1938-1942 2-volume textbook on Human Anatomy Investigation of the Nervous System in Men and Animals 1925 (German) 70 scientific works
Services	
1903-1907	Educational Anatomical museum organized in Kharkiv
1924	Re-embalment of Lenin's body
Distinctions	Honored Professor (1924) Laureate of Lenin's prize (1927) Member of Academy of Science of Ukraine (1934) Order of Lenin (1934)

Language of Medicine: MALE AND FEMALE REPRODUCTIVE SYSTEM

Are all systems of the organism the same in all people?
Which system is different in women and men?

4. Read the text quickly. Arrange the headings in the order they were mentioned in the text:

Reproduction and hereditary material.
The structure of the uterus.

Organs which produce sex cells.
The organs of the female reproductive system.
Ovum development and fertilization.
The uterus.

MALE AND FEMALE REPRODUCTIVE SYSTEM

Sexual reproduction is the union of the female sex cell (ovum) and the male sex cell (sperm) which results in the creation of a new individual. Each sex cell (also called a gamete) contains exactly half the number of chromosomes that a normal body cell contains. When the ovum and sperm cell unite, the cell produced receives half of its genetic material from its female parent, and half from its male parent.

Sex cells are produced in special organs called gonads in the male and female. The female reproductive system consists of organs which produce ova and provide a place for the growth of the embryo. In addition female reproductive organs supply hormones (estrogen and progesterone). Other hormones which control the functions of the ovary, breast, and uterus are secreted by the anterior lobe of the pituitary gland.

Ova are produced by the ovary from the onset of puberty to menopause. The fallopian tubes lead from each ovary to the uterus, which is a muscular organ situated between the urinary bladder and the rectum. The vagina is a muscular tube extending from the uterus to the exterior of the body.

Within each ovary there are thousands of small sacs called graafian follicles. Each graafian follicle contains an ovum. When an ovum is mature, the graafian follicle ruptures and the ovum leaves the ovary. The release of the ovum from the ovary is called ovulation. The egg, after its release from the ovary, is caught up by the finger-like ends of the fallopian tube. It usually takes the ovum about five days to pass through the fallopian tube. It is within the fallopian tube that fertilization takes place if any sperm cells are around.

The fallopian tubes, one on either side, lead into the uterus, a pear-shaped organ with muscular walls and a mucous membrane lining filled with blood vessels. The specialized epithelial mucosa of the uterus is called the endometrium; the middle, muscular layer is the myometrium; and the outer, membranous tissue layer is the perimetrium.

The male sex cell, the spermatozoon (sperm cell), is tiny and microscopic in volume, less than 1/100,000th the size of the female ovum. It is composed of a head region, which contains nuclear hereditary material, and a tail region that makes the sperm motile. The sperm cell lives only long enough to travel from its point of release from the male to where the egg cell lies within the female (fallopian tube).

If more than one egg is passing down the fallopian tube when sperm are present, multiple fertilizations are possible, and twins, triplets, quadruplets, and so forth, may occur. Twins resulting from the fertilization of separate ova by separate sperm cells are called fraternal twins.

Identical twins are formed from the fertilization of a single egg cell by a single sperm. As the fertilized egg cell divides and forms many cells, it somehow comes apart and each part continues separately to undergo further division, each producing an embryo. Identical twins are always of the same sex and very similar in form and feature.

The organs of the male reproductive system are designed to produce and release spermatozoa. In addition, the male reproductive system secretes a hormone called testosterone. Testosterone is responsible for the development and maintenance of accessory male sexual organs.

The male gonads consist of a pair of testes (singular: testis), also called testicles. The seminal vesicles are glands which are located at the base of the bladder and open into the vas deferens as it joins the urethra. The seminal vesicles secrete a substance that nourishes the sperm cells. Semen is a combination of fluid and spermatozoa which is ejected from the body through the urethra. The prostate gland secretes a thick fluid which aids the motility of the sperm.

(From *THE LANGUAGE OF MEDICINE*)

5. Which of the following is described in the text:

a) Difference between sex cells and normal body cells.
b) The male gonads.
c) The place of fertilization.
d) Duration of pregnancy.
e) The period during which ova are produced.
f) Hormonal interactions.
g) Movement of the ovum along the fallopian tubes.
h) Embryo development.
i) Significance of contraception.
j) The process of fertilization.
k) Difference between fraternal and identical twins
l) The process of forming identical twins

6. What questions can be asked to know about the facts which are not mentioned?

7. Is the following true or false? Correct the false sentences:

a) The size of a spermatozoon is equal to the size of an ovum.

b) Male sperm cells do not have all the structures which usual cells have.

c) Identical twins are always girls.

d) *Gonads* is the word used for male sex organs.

e) Semen consists of liquid substance and sperm cells.

f) The substance secreted by the prostate gland provides the movement of the spermatozoa.

g) Male and female sex organs are responsible for reproduction.

h) Fertilization takes place in the uterus.

8. Continue the statements:

1). Male and female sex organs produce … .
2). The embryo grows in the … .
3). The walls of the uterus have … .
4). Ovulation usually lasts … .
5). The size of the sperm … .
6). The life span of spermatozoa is … .

7). Identical twins look … .

8). Testicles is another name for … .

9). Sperm motility is provided … .

9. Give a common word for each term:

a) ovum
b) sperm

10. Say in one word:

a) male sex cell

b) female sex cell

c) the structure which aids in movement of sperm cells

d) the birth of three babies as a result of a single pregnancy

e) the union of a spermatozoa and an ovum

f) male reproductive gland

g) tube which carries the urine from the bladder to the outside

h) a small gland in the male situated at the base of the bladder, concerned with preparation of the semen

11. Study the combining forms:

ovo- egg
spermato- sperm
embryo- embryo
ovario- ovary
oophoro- ovary
mammo- breast
masto- breast
utero- uterus
hystero- uterus
metro- uterus
-cyesis – pregnancy
-tocia – birth
psuedo- false
testo- testis
orcho- testis
orchido- testis
orchio- testis
spermato- spermatozoon

Build medical words:

muscular layer of the uterus

false pregnancy

egg cell

removal of the uterus

slow delivery

inflammation of the breast

inflammation of testes

production of sperm cells

11. Fill in the gaps in the summary of the text:

The _____differ form the rest of the normal cells in the number of _____. Sex cells are produced in _____ . _____, or union of sex cells takes place in the _____ organism. Development of the embryo takes place in the _____ . The female reproductive system produces _____, provides the place for development of the _____ and supplies some _____ . Ova develop from _____ to _____ . The _____ lead the ova to the uterus. The ovum is included in the _____ . The process when a _____ ovum leaves the ovary is termed _____ . Fallopian tubes lead the ovum to the _____ . _____ are the place for fertilization. The three layers of the uterus are _____, _____, _____ .

The _____ is a microscopic cell, 1/100,000th the size of the ovum. It is composed of _____ and _____. Semen is a combination of fluid and spermatozoa. The _____ gland secretes a thick fluid which aids the _____ of the sperm.

12. Are there twins (triplets) among your friends?
Are they identical or fraternal twins?
How similar or different are they?
Explain the difference between identical twins and fraternal twins.

Did you know?

Every day a man makes between 50 and 500 mln sperm.

The uterus is a size of a pear. During pregnancy it expands to around the size of a basketball.

Basic terminology

Breast - the organ of milk secretion
Embryo - the developing organism from conception until approximately the end of the second month
Fallopian tube - one of the tubes leading on either side from the upper or outer extremity of the ovary to the fundus of the uterus
Gamete - any germ cell, whether ovum or spermatozoon
Gonad - an organ that produces sex cells; a testis or an ovary
Graafian follicle - a follicle in which the oocyte attains its full size
Ovary - one of the paired female reproductive glands containing the ova or germ cells

Ovulation - release of an ovum from the ovarian follicle.
Ovum - the female sex cell
Prostate gland - a chestnut-shaped body, surrounding the beginning of the urethra in the male, lying above and between the ejaculatory ducts.
Seminal vesicles - one of two glandular structures which is a diverticulum of the ductus deferens
Sperm - the male gamete or sex cell that contains the genetic information to be transmitted by the male
Spermatozoon - the male gamete or sex cell that contains the genetic information to be transmitted by the male
Testis - one of the two male reproductive glands, located in the cavity of the scrotum
Uterus - the hollow muscular organ in which the impregnated ovum is developed into the child
Vagina - the genital canal in the female, extending from the uterus to the vulva
Vas deferens - the secretory duct of the testicle, running from the epididymis to the prostatic urethra where it terminates as the ejaculatory duct

Unit 15

KEY WORDS

Beverage - any sort of drink except water, e.g. milk, tea, wine, bear
Composition - the pars of which something is made up
Fast - steady
Inhabit (v) - to live in
Mixture - something made by mixing
Mould - woolly or hairy growth of fungi appearing upon moist surfaces
Pox – smallpox, a serious disease that causes spots which leave marks on the skin
Refer (v) - speak of
Requirement - something needed
Response - answer, reaction
Rod - a thin straight piece of wood or metal
Single - one and no more
Stain (v) - to color, to dye
Twist (v) - receive have or grow in a spiral form
Yeast - substance use in making bread and in brewing beer

Socializing: INTERVIEW

1. Read the job announcement.

What questions can be asked to an applicant for the job during the interview?

Representation of the Swiss company in Ukraine
(Prescription department)
in view of the staff increase declares the enrollment of employees to new vacant positions

Product Manager

Profiles for the position:
⇒ University degree in medicine
⇒ Successful experience of Product Manager within a pharmaceutical company no less than 2 years
⇒ Marketing knowledge and skills (Marketing education is a plus)
⇒ Fluent English
⇒ Good communication, negotiation and presentation skills
⇒ Driving license, category B

Manager

⇒ University degree in medicine
⇒ Successful experience of Group Product manager, Marketing Manager with a pharmaceutical company no less than 2 years
⇒ Fluent English
⇒ Strong leadership and management skills
⇒ Driving license, category B.

Please, send your resume by fax or e.mail.

2. Listen to the interview and complete the CV.
Does this applicant have a chance to occupy the position of a product manager?

CURRICULUM VITAE

Name

Address

Telephone

Date of birth

Education

Scientific degree

Languages

Computing skills

Driving skills

Work experience

3. Act as an interviewer and an applicant (Use the data of the job announcement):

Medical representative vacancies

Danish Pharmaceutical Company
Representative office in Ukraine and Moldova
is seeking for a successful candidate for full time position of the medical representative located in Kyiv and a successful candidate for the full time position of the medical representative located in Kharkiv

Requirements

- University degree in Medicine or Pharmaceutics
- Basic English basic PC skills
- Working experience as a medical doctor / representative is a plus
- Driving license
- Good interpersonal skills
- Age under 35 y.o.
- Readiness for business trips (50% of the working time)

Deadline for sending your CVs are 29 June 2007.
Our fax: (044) 747 67 40

Language of Medicine: MICROORGANISMS

What is a microscope? What is it used for?
How do we call the organisms which can be seen with a microscope?
What is the meaning of the prefix micro-?

4. Listen and note the questions. Answer them.

1)

2)

3)

4)

5)

6)

7)

8)

5. Read the text and check your answers:

MICROORGANISMS

The world of microorganisms includes bacteria, fungi, protozoa, and viruses. Bacteria form a large mixture of single-celled microorganisms. Bacteria are distinguished from one another by several factors including shape, color reactions, chemical composition, growth (nutrient) requirements, and responses to various chemicals, such as antibiotics.

Bacteria appear in one of three basic shapes: the coccus or spherical form, the bacillus or rod, and the twisted spiral or spirillum.

Several staining procedures or techniques are used in the detection and identification of bacteria. Two of the better known are the Gram stain and the acid-fast stain. In the Gram stain, bacteria that take the color of the first or primary stain are referred to as Gram-positive. Those bacteria that take the secondary stain are referred to as Gram-negative. In the acid-fast procedure, bacteria that take the primary stain, are called acid-fast. Those bacteria that take the color of the secondary stain, are referred to as non-acid-fast.

The fungi represent a group of single- and multi-cellular forms of life and include yeasts, molds, and mushrooms. Several fungi are used in the commercial production of bakery goods, cheeses, antibiotics, alcoholic beverages, and certain chemicals. Others are known for their destructive effects on plants, humans, and other animals.

Protozoa are a group of single-celled animal-like microorganisms. Most are harmless and inhabit soil and water environments in great numbers. Some protozoa cause diseases such as malaria.

Viruses cannot be seen with an ordinary microscope. An electron microscope must be used. Viruses cause a large number and variety of diseases, including the childhood disease pox and the

more recently discovered acquired immune deficiency syndrome or AIDS. No form of life is free from possible virus infection.

One of the most important features of viruses is that they are not cells. Individual virus particles or virions contain a single type of nucleic acid, either deoxyribonucleic acid (DNA) or ribonucleic acid (RNA), never both. A major distinguishing property of viruses is that they can only be grown in living cells.

Since the discovery and visualization of viruses, new infectious disease agents have been uncovered. These include viroids and prions. Viroids are composed of only small pieces of nucleic acid and primarily cause plant diseases. Prions consist of pure protein and are associated with central nervous system diseases.

(From *MEDICAL TERMINOLOGY IN ACTION*)

6. True or false:

1). Microorganisms are distinguished by shape, color reactions, growth (nutrient) requirements, and responses to antibiotics.

2). As to the shape there are 3 types of bacteria.

3). Staining identifies the size of bacteria.

4). The fungi are single-cellular organisms.

5). Protozoa resemble animals.

6). Viruses can invade any organism.

7). Prions cause several diseases of the nervous system.

7. Match a phrase in A with a phrase in B.

A	***B***
Bacteria, fungi, protozoa, viruses	are used in food industry.
The cocci	several staining procedures.
There are	is caused by a virus.
Some fungi	is a recently discovered group of causative agents.
The causative agent of malaria	are called microorganisms.
AIDS	do not grow on media.
Viruses	are spherical bacteria.
Prions	is a microorganism from a protozoa group.

8. Which of the following corresponds to the text:

1). There are several groups of microorganisms.
2). Bacteria consist of one cell.

3). Bacteria can be distinguished using staining procedures.
4). The fungi consist of many cells.
5). Some fungi are harmful.
6). Prions are single-celled organisms.
7). As to the shape there are three types of bacteria.
8). Protozoa resemble animals.
9). Viruses invade dead tissues.
10). Viroids cause several diseases of the nervous system.

9. Write the plural for the following:

Bacterium, fungus, protozoon, virus, coccus, bacillus, viroid, prion.

10. Explain the meaning of the following:

microbiology

mycology

bacteriology

virology

11. Compare different microorganisms. Use ***in contrast to, as opposed to, unlike*** *for differences.*

E.g. In contrast to (as opposed to, unlike) bacteria viruses are not cells.

- cocci and bacilli (rod-shaped / spherical);
- fungi and other microorganisms (single celled / multi-celled);
- viruses and bacteria (light microscope / electronic microscope; grow on media / grow on living cells; cells / not cells);
- viroids and prions (cause diseases in plants / are responsible for central nervous system diseases; fragments of nucleic acid / protein particles);
- Gram-positive bacteria and Gram negative bacteria (primary stain / secondary stain);
- acid-fast and non-acid-fast bacteria (primary stain / secondary stain).

12. Explain the difference between ***virion*** *and* ***viroid****.*

13. Study the combining forms:

micro- small
scopy – visual examination
bacterio- bacterium
myco- fungus
fungo- fungus
protozoo- protozoon
viro- virus
-cide – kill

Analyze the words:

bacteremia

bactericide

bacteriologist

bacteriuria

fungicide

protozoology

virology

virologist

virucidal

viruria

Basic terminology

Bacillus - any rod-shaped bacterium
Bacterium - a unicellular microorganism that usually multiplies by cell division and has a cell wall that provides a constancy of form
Coccus - a bacterium of round, spherical, or ovoid form
Fungus - a general term used to encompass the diverse morphological forms of yeasts and molds
Prion - proteinaceous infectious agent
Protozoon (pl. protozoa) - single-celled microorganisms, the lowest form of animal life
Spirillum – spiral-shaped bacteria
Stain - a dye used in histologic and bacteriologic technique; a procedure in which a dye or combination of dyes and reagents is used to color the constituents of cells and tissues
Virion – t he complete virus particle that is structurally intact and infectious.
Virus - a group of infectious agents which are capable of passing through fine filters, are usually not visible through the light microscope, lack independent metabolism, and are incapable of growth or reproduction apart from living cells

Unit 16

KEY WORDS

Adjacent - lying near
Adverse - unfavorable
Affect (v) - have an influence
Airborne - transported by air
Assign (v) - name, appoint
Bud - a leaf, flower or branch at the beginning of its growth
Confine - to keep within limits
Distinctive - serving to mark a difference
Feature - characteristic or striking part
Filament - slender thread
Ingestion - eating
Inhale (v) - breathe in
Kingdom - country ruled by a king or a queen
Minute - very small
Spoilage – waste resulting from something being spoiled
Spore - single cell by which a flowerless plant reproduces itself

Language of Medicine: FUNGI

What can be a cause of a disease?
What kinds of microorganisms may be responsible for diseases in humans?

1.Do the test about fungi. If necessary consult the text:

TEST

1) Distinctive features of the fungi are …
a) nucleus
b) genes
c) cellular membrane

2) Hyphae are …
a) thread-like formations in moulds
b) buds of some fungi
c) colonies of fungi

3) Some fungi show …
a) dimorphism
b) polymorphism
c) dysmorphism

4) Fungi live…
a) in moulds
b) on other organisms
c) in a kingdom

5) The parts of the fungi which are responsible for allergic reaction are ..
a) spores
b) buds
c) hyphae

6) If you eat wild mushrooms you can get…
a) mycosis
b) mycotoxicosis
c) mycetism

7) Medical mycology deals with …
a) invasive fungal diseases
b) diseases caused by fungal toxins
c) mushroom poisoning

8) Mycoses are classified according to …
a) the causative agents
b) the localization of the disease
c) metabolic by-products of the fungi

9) Pathogens cause diseases in
a) animals only
b) only people with poor health
c) in all people who contact them

FUNGI

Fungi are saprophytic or parasitic organisms that are normally assigned to a distinct Kingdom. As eukaryotes, they have the complex subcellular organization and highly organized genetic material seen in both animal and plant cells. The cell wall is a distinctive feature of fungi and contains complex macromolecules such as chitin. The arrangement and reproduction of individual cells is also characteristic. Most fungi form new cells terminally, which remain connected to form long, branching filaments or hyphae (the mould fungi). Some reproduce in a similar manner but each new cell separates from the parent by a process of budding (the yeast fungi). It is a feature of certain fungi to be yeast-like during one phase of their life history but hyphal at another, a phenomenon known as dimorphism. In culture, mould fungi usually form a cottony growth on laboratory media while yeasts normally have a smooth, shiny appearance.

Fungi adversely affect man in a number of ways. They cause disease indirectly by spoilage and destruction of food crops with subsequent malnutrition and starvation. Many of the common molds produce and release spores, which may act as airborne allergens to produce asthma. Fungi elaborate complex metabolic by-products which may be toxic. Disease caused by the ingestion of fungal toxins includes both poisoning by eating certain mushrooms (mycetism) and damage caused by the ingestion of minute quantities of toxin (mycotoxicosis), for instance in contaminated grain. Finally, fungi may invade human tissue. Medical mycology is largely concerned with this last group.

Invasive fungal diseases are normally divided into three groups: the superficial, subcutaneous, and deep mycoses. In superficial infections fungi are confined to the skin and mucous membranes. Subcutaneous infections are usually tropical: the main site of involvement is within subcutaneous tissue, although secondary invasion of adjacent structures such as bone or skin may occur. In deep or systemic infections, deep viscera such as lung, spleen or brain are invaded. This classification of mycoses is based on the main “sphere of involvement” by the causal organisms, but there are rare exceptions. For instance, brain involvement has been recorded in patients with chromoblastomycosis, which is normally a subcutaneous infection.

The fungi causing systemic mycoses are often classified in two groups: the opportunists and the pathogens. The former cause disease in compromised individuals. These contrast with the true pathogens, which cause infection in all subjects inhaling airborne spores.

(From *OXFORD TEXTBOOK OF MEDICINE*)

2. Find the words with the same meaning:

- pertaining to the animal or plant which lives inside or on the body of another animal or plant;
- an organism that grows on dead organic matter, plant or animal
- failure to meet nutritional requirements;
- that which produces an allergic reaction;
- science of fungi;
- near the surface;
- under the skin;
- the invasion of the body by harmful organisms;

- anything capable of producing disease.

*3. Write singular for **fungi**. Find other examples of Latin or Greek plural.*

4. Which of the following is not true:

- Fungi can live both on living and dead tissues.
- The threads of fungal cells are called hyphae.
- All fungi are either yeast-like of hyphal.
- Fungi can cause a lot of harm.
- Asthma may be caused by spores.
- All mushrooms cause mycetism.
- Fungi may invade human organism.
- Pathogens are dangerous only to weakened persons.

5. You want to know:

- ***how fungi build new cells;***
- ***about distinctive features of fungi;***
- ***in what way the fungi cause diseases;***
- ***the meaning of the word mycetism;***
- ***the name of the disease caused by eating wild mushrooms;***
- ***the groups of invasive fungal diseases;***
- ***subcutaneous fungal diseases are common;***
- ***the difference between opportunists and pathogens.***

Write the questions which can be asked.

Work in pairs to ask and answer the questions.

6. Study the combining forms:

eu – normal
karyo – cell
myco - fungi
toxo – poison
di - two

Match a term and its definition:

Euphonia	Normal voice sounds
Mycosis	Poisonous substance
Toxicology	Development of a cell nucleus
Karyogenesis	Having two phases
Eupepsia	Normal breathing
Diphasic	An agent that destroys fungi
Toxin	Science dealing with poisons
Fungicide	Normal digestion
Eupnea	Disease caused by fungi

7. Explain the difference between ***mycetism*** *and* ***mycotoxicosis; saprophytes*** *and* ***parasites****.*

8. Use the key words to describe the way in which fungi affect the man:

a) spoil, destroy, cause starvation;
b) spores, asthma;
c) mushroom, poisoning;
d) invade, cause disease.

9. *What is the difference between the three types of mycoses?*

10. Write questions about fungi.
Act as a student and a teacher. Ask and answer the questions.

11 Fill in the gaps to write a summary.

The fungi represent a group of _____and _____ cellular forms of life and include _____, _____, and _____. The study of fungi is called _____. All fungi have a_____form of cellular organization. Most fungi consist of _____ structures or hyphae. Fungi produce _____. Fungi can cause _____ of plants, humans and animals.

12 Write a short report about benefit and harm of fungi.

Socializing: SPEAKING TO A PATIENT

13. During the first visit it is necessary to know the general information about the patient. What questions can be asked about the

- name
- age
- address
- phone number

- job
- place of work
- marital status
- children
- previous diseases
- complaints
- smoking habits and number of cigarettes a day
- drinking habits

14. Work in pairs.
Act as a doctor and a patient.
The doctor fills in PERSONAL DETAILS section of the case history.
The information for the patient can be found in the APPENDIX.

Basic terminology

Allergen - an incitant of altered reactivity (allergy), an antigenic substance
Hypha (pl. Hyphae) - a branching tubular cell characteristic of the filamentous fungi (molds)
Malnutrition - faulty nutrition resulting from malabsorption, poor diet, or overeating
Mycetism - poisoning by certain species of mushrooms
Mycosis - any disease caused by a fungus
Opportunist - an organism capable of causing disease only in a host whose resistance is lowered, e.g., by other diseases or by drugs
Parasitic - organisms that normally grow only in or on the living body of a host
Pathogen - any virus, microorganism, or other substance causing disease
Saprophyte - an organism that grows on dead organic matter, plant or animal
Spore - the asexual or sexual reproductive body of fungi or protozoa
Starvation - lengthy and continuous deprivation of food

Unit 17

KEY WORDS

Cough (v) – to suddenly push air out of your throat with a short sound
Cough (n) – the action or sound made when you cough
Defense – the act of protecting something form attack
Destroy – to damage something so badly that it cannot be repaired
Establish - to start having relationship with someone
Injury – a wound or damage to a part of your body caused by an accident or attack
Interfere with (v) – to prevent something from happening
Overcome – to fight and win against someone or something
Provoke – to cause a sudden reaction that is often extreme or unpleasant
Pus – a thick yellowish liquid produced in an infected part of the body
Selective – affecting or concerning the most suitable people or things from a large group
Sneeze (v) – if you sneeze, air suddenly comes from your nose, making a noise, for example when you have a cold
Susceptibility – the condition of being easily affected or influenced by something

Language Input: COMPLEX SUBJECT

1. Read and compare the two sentences. Which of them is less categorical?

1). The total number of bones in the body is 206.
2). It is reported that the total number of bones in the body is 206.

2. *Compare:*

(1) It is reported that the total number of bones in the body is 206. =
(2) The total number of bones in the body is reported to be 206.

You may use two ways of saying the same: complex sentence (1) and Complex Subject (2).

3. Rewrite the sentences:

E.g. Psoriasis is believed to be an inherited skin condition. – It is believed that psoriasis is an inherited skin condition.

a) A woman was found to have an ulcer on the left leg.

b) Hepatitis C virus is known to cause most cases of non-A and non-B hepatitis.

c) Six specific viruses appear to be responsible for hepatitis development.

d) The lifestyle of an individual is believed to contribute to the type of cancer that develops.

e) Sometimes surgical removal of a tumor appears to be successful.

f) Pyogenic infections and abscesses are generally considered to be separate problems.

4. Change complex sentences into complex subject:

a) It is considered that antibiotics that inhibit a single bacterial group or a few species have a limited spectrum of activity.

b) It is said that the drugs active against several gram-positive and gram-negative bacteria have a broad spectrum.

c) It is likely that this disease has serious consequences.

d) It has been reported that extracorporeal lithotripsy is useful when surgical removal proves difficult.

e) It was found that about 1.5% of blood donors had a reaction with this test.

f) It appears that head injury does not cause astrocytomas.

g) It is believed that placental lactogen stimulates breast development and milk production.

5. Make the statements less categorical using Complex subject:

a) The incubation period of this disease is short, around two to seven days. (believe)

b) The risk of contracting this disease is extremely small. (believe)

c) SARS is less infectious than influenza. (appear)

d) Interferon stops rapidly dividing cells. (know)

e) Emotional stress plays an important role in arthritis. (believe)

e) Several tumors are caused by viruses. (believe)

g) A number of viruses produce cancer in animals. (know)

Language of Medicine: IMMUNITY

6. Read the text quickly and choose the title for it:

IMMUNE REACTIONS
THE IMMUNE SYSTEM
NONSPECIFIC IMMUNOLOGICAL REACTIONS
INFLAMMATION
PROTECTION

7. Arrange the facts in the order they are mentioned in the text:

Significance of temperature elevation.
Factors responsible for nonspecific immunological responses.
The function of the immune system.
Mechanical and chemical barriers.
The role of inflammation.

Humans are protected in varying degrees from disease-causing microorganisms and cells by the immune system. Together, the different parts of this system provide immunity by establishing barriers to invasion by microorganisms or other infectious-disease agents or by selectively neutralizing or eliminating materials recognized by the immune system as being foreign to the body. Important to the proper functioning of such a protective mechanism are immunological responses that may be either nonspecific or specific.

Nonspecific immunological responses represent the first and second lines of defense used to protect against foreign cells or substances. Factors contributing to an individual's nonspecific resistance include mechanical and chemical barriers, phagocytosis, inflammation, fever, and various antimicrobial products of the body. An absence of or defect in any of these factors lowers an individual's resistance and increases susceptibility. While several systems of the body serve to block potential disease agents from establishing themselves, mechanical and chemical barriers are among the most important of defense mechanisms. These include unbroken skin, mucous membranes of the respiratory and genitourinary systems, nasal hairs, coughing and sneezing reflexes, tears and their washing action, eyelashes, and the various secretions and microbial contents of the different portions of the gastrointestinal system.

Various chemical substances found in body fluids, tissues and cells also are known to interfere with the actions of disease agents and even destroy them. Such substances include the complex protein known as complement and the interferons.

In the event the mechanical and chemical barriers are overcome by foreign invaders, the body has other important defenses available, including phagocytosis. In this process the ingestion and eventual digestion of foreign matter by circulating granulocytes, monocytes, and macrophages take place.

Inflammation is considered to be the body's second line of defense against infection. It can be provoked by infectious-disease agents and by irritating factors such as chemicals, heat, and mechanical injury. The most important event in this process is the gathering of large numbers of phagocytic cells at the site of inflammation. The typical or cardinal signs of inflammation are heat, pain, redness, swelling, and loss of normal function. They represent the body's first step in the repair of injured tissue. Pus formation may also occur with inflammation. Pus is fluid formed by the remains of damaged tissue cells and dead phagocytes and microorganisms.

In addition, there also are systemic or overall body responses. One of the most important of these is fever, a frequently found sign of many disease states and a part of the local inflammatory reaction. Normal body temperature is 37° Celsius (C). It is controlled by a temperature-regulating center in the brain. Fever can be caused by various factors including pathogens, certain processes associated with immunity, and nearly any type of tissue injury. Temperatures of 38.5 - 39° C are known to be helpful to a person's recovery, since destruction of disease agents occurs more rapidly because of an increase in antibody production and more effective phagocytic activity.

(From *MEDICAL TERMINOLOGY IN ACTION*)

8. You want to know:

a) In what parts of the body mechanical protective factors can be found.
b) If complement is a chemical or mechanical factor.
c) How we call the process of eating foreign bodies by the cells found in the blood.
d) How many signs are considered typical for inflammation.
f) If inflammation is considered the first line of defense or the first stage of restoration of damaged tissue.
g) Which sign can often be observed in different diseases.
h) How fever can help fight against diseases.

Write the questions. Work in pairs and ask your neighbor.

9. Which of the three variants is the closest to the statements from the text:

Humans are protected in varying degrees from disease-causing microorganisms and cells by the immune system.

a) The immune system protects us from diseases.
b) The immune system varies from person to person.
c) Causative agents of disease are various.

Together, the different parts of this system provide immunity by establishing barriers to invasion by microorganisms or other infectious-disease agents or by selectively neutralizing or eliminating materials recognized by the immune system as being foreign to the body.

a) Microorganisms in the human body are neutralized by foreign substances.
b) Foreign substances are eliminated by microorganisms.
c) The immune system prevents entrance of microorganisms and gets rid of foreign materials.

Factors contributing to an individual's nonspecific resistance include mechanical and chemical barriers, phagocytosis, inflammation, fever, and various antimicrobial products of the body.

a) Mechanical and chemical barriers, phagocytosis, inflammation, fever, antimicrobial products are the second line of defense against foreign bodies.
b) Mechanical and chemical barriers, phagocytosis, inflammation, fever, antimicrobial products are called nonspecific immunological responses.
c) Mechanical and chemical barriers, phagocytosis, inflammation, fever, antimicrobial products are called the first line of defense.

In this process the ingestion and eventual digestion of foreign matter by circulating granulocytes, monocytes, and macrophages take place

a) Phagocytosis means eating of granulocytes, monocytes, macrophages.
b) Phagocytosis is accompanied by granulocytes, monocytes, and macrophages.
c) Phagocytosis is accomplished by granulocytes, monocytes, and macrophages.

Inflammation can be provoked by infectious-disease agents and by irritating factors such as chemicals, heat, and mechanical injury.

a) Microorganisms, chemical substances, heat and mechanical injury causes inflammation.
b) Inflammation can cause irritation.
c) Inflammation is followed by irritation.

Temperatures of 38.5 - 39° C are known to be helpful to a person's recovery, since destruction of disease agents occurs more rapidly because of an increase in antibody production and more effective phagocytic activity.
a) Microorganisms are destroyed at temperatures of 38.5 – 39 °C.
b) Temperatures of 38.5 – 39 °C accelerate antibody formation and phagocytosis.
c) Antibodies are destroyed at temperatures of 38.5 – 39 °C.

10. Continue:

The role of the immune system is ...

Nonspecific immunity is provided by ...

Mechanical and chemical barriers include ...

Phagocytosis is ...

The second line of defense is ...

The signs of inflammation are ...

An important systemic response is ...

Normal body temperature ...

Fever increases ...

11. Find example of Complex subject in the text. How can these statements be changed?

12. When a patient has flu or a cold and his body temperature is < 38 ℃, he is not recommended to take aspirin. Explain this fact.

Socializing: SPEAKING TO A PATIENT

13. Listen to the phrases. Who speaks them? Where are the people?

14. Arrange the phrases in the doctor's surgery in the order they were pronounced.
Listen and check

15. You've got a headache (toothache, fever, diarrhea, pain in the belly). Call a doctor's surgery and ask for appointment

Basic terminology

Complement - substance, normally present in serum, that is destructive to certain bacteria and other cells
Fever - a complex physiologic response to disease characterized by a rise in core temperature and activation of immunologic systems
Immune - free from the possibility of acquiring a given infectious disease; resistant to an infectious disease
Immunity - the status or quality of being immune
Inflammation - a fundamental pathologic process consisting of a complex of cytologic and chemical reactions that occur in the affected blood vessels and adjacent tissues in response to an injury or abnormal stimulation caused by a physical, chemical, or biologic agent
Interferon - a class of small glycoproteins that exert antiviral activity
Phagocytosis - the process of ingestion and digestion by cells of solid substances, e.g., other cells, bacteria, bits of necrosed tissue, foreign particles

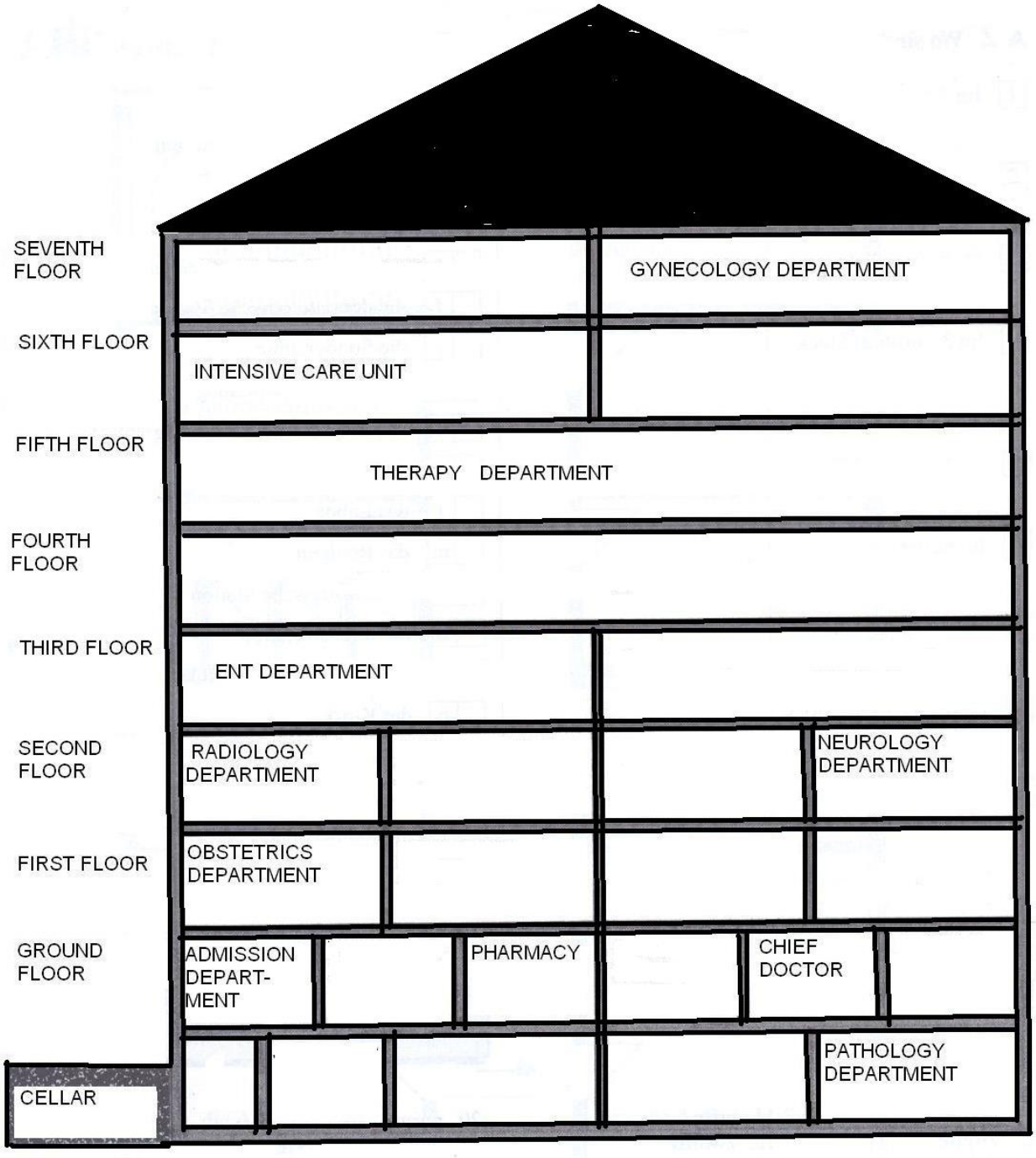
Functions

Result and reason	*He has an allergy, **because** he has eaten some strawberries.* ***As/since** he has eaten some strawberries, he has an allergy.* *He has eaten some strawberries, **as a result** he has an allergy.* *His allergy **was caused** by strawberries.* *Strawberries **may cause** allergy.* *Eating strawberries may **result** in allergy.* *Allergy may **result from** eating strawberries.* *His allergy **was due to** eating strawberries.*
Contrast	***Although** she was ill, she went to school.* ***Despite** her illness, she went to school.* ***In spite of** her illness, she went to school* *While/Whereas* *She was ill. **However**, she went to school.* *She was ill, **but** she went to school.* *She was ill, **yet** she went to school.* ***On the other hand*** ***In contrast to*** ***As opposed to*** ***Unlike***
Purpose	*I went to the shops **for some bread.*** *They went to Holland **to see the tulips.*** *They make the vaccination **in order to** avoid the infection.*
Advice	***I think you should** stay at home.* *If I were you, I'd stay at home.* *Why don't you stay at home?*
Asking	***Can you** wait here?* ***Will you** wait here**, please**?* ***Would you** wait here, **please**?*
Refusing	***Sorry, I can't.***
Accepting	***Of course, I can.***
Asking for information	***Can you** tell me* ***Could you** tell me* ***Would you mind** telling me*
Asking for permission	*Is it all right if I leave early, please?* *Can I leave early, please?* *Could I leave early, please?* *Yes, of course.* *Sorry, but you can't.* *May I leave early, please?* *Yes, you may.* *Sure.* *Of course*

	Sure, no problem.
Asking for advice	*What would you do?* *What do you think I should do?*
Agreement	*I agree.* *That's right.*
Disagreement	*I don't agree.* *I don't think so.*

Appendix

Unit 2. Ex. 11



Unit 3. Ex. 2

	Mo	**Tu**	**We**	**Th**	**Fi**
9.00 - 10.40	Anatomy (lecture)	Latin	Chemistry (lecture)	English	Physics (practical class)
11.10 – 12.50	Histology (lecture)	Chemistry (practical class)	Anatomy (test)	Philosophy	Physics (lecture)
13.20 – 15.00	Histology (laboratory work)	Scientific conference		Anatomy (laboratory work)	
15.20 – 17.10		Scientific conference			

Unit 7. Ex. 2

1 – the thoracic cavity
2 - four
3 - atria *(singular:* atrium),
4 - ventricles
5 - septa *(singular:* septum)
6 - heart wall
7 - a smooth layer of cells which lines the interior of the heart
8 – myocardium
9 - the outer layer of the heart wall
10 - two
11 - diastole (relaxation) and systole (contraction)
12 - as diastole ends
13 - the pulmonary artery
14 – systole
15 - the atria and ventricles fill with blood

Unit 11. Ex. 6

1) 310 mln; 2) acetylcholine; 3) coordination of voluntary movements, maintaining balance and muscular tone; 4) the pons; 5) respiratory center, cardiac center, vasomotor center; 6) about 140 ml; 7) 42 to 45 cm; 8) dura mater, arachnoid membrane, pia mater; 9). Nerves which carry impulses toward the brain and spinal cord from sensory receptors; 10). Carry impulses throughout the body.

Unit 13. Ex. 1

Arrange the events in the chronological order:

___Open heart surgery
___Tracheotomy
___Chemotherapy
___Test tube baby (in vitro fertilization)
___Measles vaccine
___Cataract operation
___Smallpox vaccine
___Discovery of DNA structure

Discuss your results with your group mate. Express your agreement or disagreement with the choice of your partner. Tell more about the date, country and author using the information:

Results of your partner

1. Tooth filling – 3000 BC in Sumer
2. Treatment of anemia with iron – 1624 Thomas Sydenham
3. Discovery of chloroform – 1831
4. Contact lens – 1887
5. Diagnostic x-rays – 1896 Michael Pupin
6. Dialysis machine – 1943 Wilhelm Kolff
7. Laser eye surgery – 1962
8. Heart transplantation – 1978 Christian Bernard

Ex. 2.

The most important discoveries in medicine of the 20th century
Blood groups – 1901
Higher nervous activity - 1904
Syphilis diagnosis – 1906
Vascular suture joining vessels - 1912
Insulin – 1921
Penicillin – 1928
Use of neutrons to treat cancer – 1937
Streptomycin (drug against tuberculosis) - 1943
Heart-lung machine – 1953
Vaccine against poliomyelitis – 1953
Contraceptive pills - 1954
Organ transplantation – 1967
Computed tomography – 1970
Human immune deficiency virus discovery – 1983
Hepatitis B vaccine – 1986
Clone of a ship - 1997

Unit 16. Ex.14
Information about the patient: Ann Smith; 27; 6, Merton Str. Oxford; phone number: 35 49 1; secretary; museum; married; no children; flu 2 years ago; does not smoke, fever and headache

COMBINING FORMS, PREFIXES, SUFFIXES

a - without
ab - away from
abdomino - abdomen
acouo - hearing
acro - extremities
ad - forward
adeno - gland
adenoido - adenoids
adipo - fat
adrenalo - adrenal glands
adreno - adrenal glands
aero - air
algesio - excessive sensitivity to pain
-algia - pain
alveolo - air sac
an - no
ana - up
andro - male
angio - vessel
ano - anus
ante - before
antero - front
anthraco - coal dust
anti - against
aorto - aorta
arterio - artery
arthro - joint
articulo - joint
-ase - enzyme
atrio - atrium
audio - hearing
auri - ear
auro
auto - self
bacterio – bacteria
bi - two
bili - bile
bilirubino - bilirubin
bio - life
-blast - immature cell
blepharo - eyelid
bolo - to throw
brachio - arm
brady - slow
bronchio - bronchial tube
broncho
bucco - cheek
burso - bursa
carcino - cancer
cardio - heart
cata - down
ceco - cecum
-cele- hernia
celio - abdomen
-centesis - surgical puncture
cephalo - head
cerebro - brain
cervico - neck
cheilo - lip
chemo - drug
chole - bile
cholecysto - gallbladder
chondro - cartilage
-cidal - killing
ciso - to cut
claviculo - clavicle
-clysis - washing
-coccus - berry-shaped
coccygo - coccyx
colo - colon
con - with
conio - dust
contra - against
corneo - cornea
corono - heart
cortico - cortex
costo - rib
cranio - skull
-crine - secrete
crino - to secrete
cryo - cold
cutaneo - skin
cyano - blue
-cyesis - pregnancy
cysto - urinary bladder
-cyte - cell
cyto - cell
cytosis - condition of cell
dacryo - tear
dactylo - finger (toe)
de - lack of
denti - tooth
dermato - skin
dermo - skin
dia - complete
disto - far
dorso - back
-drome - to run
ducto - to lead
duodeno - duodenum

duro - dura mater
dys - bad
echo - sound
ectasia - straching
-ectasis- straching
ecto - outside
-ectomy - surgical removal
electro - electricity
-emesis - vomitig
-emia - blood condition
encephalo - brain
endo - within
entero - intestines
eosino - pink
epi - above
epididymo - epididymus
erythro - red
esophago - esophagus
esthesio - feeling
eu - good
ex - out
exo - outside
femoro - femur
fibulo - fibula
folliculo - small sac
furco - branching
gastro - stomach
-genesis - condition of
geno - producing
gingivo - gum
-globin - protein
-globulin - protein
glomerulo - glomerulus
glosso - tongue
gluco - sugar
glyco - sugar
gnoso - knowledge
gonado - sex glands
gono - seed
-gram - record
granulo - granules
-graph - instrument for recording
-graphy - process of recording
gyneco - woman
hemato - blood
hemi - half
hemo - lood
hepato - liver
hidro - sweat
histo - tissue
hydro - water
hyper - above
hypno - sleep
hypo - under
hystero - uterus
-ia - condition
-iasis - condition
iatro - physician
ileo - ileum
ilio - ilius
immuno - safe
in - in
infra - below
inter - between
intra - within
irido - iris
ischio - ischium
ischo - to hold back
iso - equal
-ist - specialist
-itis - inflammation
jejuno - jejunum
kali - potassium
karyo - nucleus
kerato - cornea
kinesio - movement
labio - lip
lacrimo - tear
lacto - milk
laparo - abdomen
laryngo - larynx
latero - side
leiomyo - smooth muscle
leuko - white
ligamento - ligament
linguo - tongue
lipo - fat
litho - stone
lobo - lobe
-logy - science
lumbo - lower back
lympho - lymph
-lysis - destruction
macro - large
mal - bad
-malacia - softening
mammo - breast
mandibulo - lower jaw
masto - breast
maxillo - upper jaw
medio- middle
medullo - medullary
-megaly - enlargement
melano - black

meningio - meninges
meningo
meso - middle
meta - between
-meter - to mesure
metrio - uterus
micro - small
mono - one
morpho - shape
morto - death
muco - mucus
muta - change
myco - fungus
myelo - bone marrow
myelo - spinal cord
myo - muscle
myoso - muscle
narco - numbness
naso - nose
nati - birth
necro - death
necto – to connect
nephro - kidney
neuro - nerve
neutro - neutral
normo - normal
nucleo - nucleus
oculo - eye
odonto - tooth
-odynia - pain
-oid - resembling
oligo - scanty
-oma - tumor
onco - tumor
onycho - nail
oophoro - ovary
-opaque - dark
ophthalmo - eye
-opia - vision
-opsy - to view
orchido
orchio
orcho - testis
oro – mouth
-orrhagia - bursting forth of blood
ortho - straight
-osis - condition
-osmia - smell
osteo - bone
oto - ear
ovario - ovary
ovo - egg
oxo - oxygen
pan - all
pancreato - pancreas
papillo - nipple-like
para - near
-paresis - slight paralysis
patho - disease
-pathy - disease
pectoro - chest
pelvi - pelvis
-penia - deficiency
-pepsia - digestion
per - through
peri - surrounding
peritoneo - peritoneum
-pexy - fixation
-phagia - eating
phago - to eat
phalango - phalanges
pharmaco - drug
pharyngo - pharynx
phaso - speech
-pheresis - removal
-philia - attraction for
philo – to like
phlebo - vein
-phobia - fear
phobo - fear
phonia - sound
-phonia - voice
-phoresis - transmission
photo - light
phreno - diaphragm
-phylaxis - protection
-plasia - development
-plasty - surgical repaire
-plegia - paralysis
pleuro - pleura
-pnea - breathing
pneo - breathing
pneumo - lung
pneumono
-poiesis - formation
poly - many
post - after
postero - back
-prandial – meal
pre - before
pro - before
procto - anus
prostato - prostatic gland
proximo - near

pseudo - false
psycho - mind
-ptosis - drooping
-ptysis - spitting
pulmono - lung
pupillo - pupil
pyelo - renal pelvis
pyo - pus
pyro - fever
radio - rays
recto - rectum
reno - kidney
retino - retina
retro - back
rhino - nose
-rrhaphy - suture
-rrhea - flow
-rrhexis - rupture
sacro - sacrum
scapulo - shoulder blade
sclero - sclera
-sclerosis - hardening
scope - instrument for visual examination
scopo - visual examination
sectio - to cut
semi - half
sepso - infection
sialo - saliva
sigmoido - sigmoid colon
sinuso - sinus
spermato - spermatozoa
spermo
spino - spine
spiro - to breathe
spleno - spleen
spondylo - vertebra
-stalsis - contraction
-stasis - stop
-stenosis - tightening
sterno - sternum
stetho - chest
-sthenia - strength
stomato - mouth
-stomy - to make a new opening
submaxillo - lower jaw
supra - above
syn - together
tele - distant
testo - testes
thalamo - thalamus
-therapy - treatment
thermo - heat
thoraco - chest
-thorax - chest
thrombo - clot
thymo - thymus gland
thyro - thyroid gland
-tome - instrument for cutting
tomo - to cut
-tomy - cutting
tonsillo - tonsil
toxico - poison
toxo - poison
tracheo - trachea
trans - across
tricho - hair
-trophy - development
tympano - eardrum
ultra - beyond
uretero - ureter
urethro - urethra
-uria - urination
urine
uro - urine
utero - uterus
valvo - valve
vaso - vessel
veno - vein
ventriculo – ventricle
ventro - belly
vertebro - vertebra
vesico - urinary bladder
viro - virus
viscero - internal organs
vulvo - vulva
xero - dry
zoo - animal life

ESSENTIAL GRAMMAR

VERB
PRESENT SIMPLE OF BE

Statements	Negatives	Questions
I am	I am not	Am I?
You are	You are not	Are you?
He is	He is not	Is he?
We are	We are not	Are we?
They are	They are not	Are they?

PRESENT SIMPLE

Statements	Negatives	Questions
I work	I do not work	Do I work?
You work	You do not work	Do you work?
He works	He does not work	Does he work?
We work	We do not work	Do we work?
They work	They do not work	Do they work?

We use Present Simple to describe
- general facts
- repeated actions (always, usually, often, sometimes, never)
- things that are always true

PRESENT SIMPLE PASSIVE

Statements	Negatives	Questions
I am taught	I am not taught	Am I taught?
You are taught	You are not taught	Are you taught?
He is taught	He is not taught	Is he taught?
We are taught	We are not taught	Are we taught?
They are taught	They are not taught	Are they taught?

We use passive
- when the doer of the action is not important (The house was build in 1999).
- when the doer of the action is not known (The window was broken last night).
- we put information at the beginning because it is important (The museum is visited by hundreds of people. The door was opened with a special key.)

PRESENT PERFECT

Statements	Negatives	Questions
I have worked	I have not worked	Have I worked?
You have worked	You have not worked	Have you worked?
He has worked	He has not worked	Has he worked?
We have worked	We have not worked	Have we worked?
They have worked	They have not worked	Have they worked?

PRESENT PERFECT PASSIVE

Statements	**Negatives**	**Questions**
I have been taught	I have not been taught	Have I been taught?
You have been taught	You have not been taught	Have you been taught?
He has been taught	He has not been taught	Has he been taught?
We have been taught	We have not been taught	Have we been taught?
They have been taught	They have not been taught	Have they been taught?

We use Present Perfect to describe

- present situation by saying what has happened without mentioning the exact time (Why are you at home? -I've broken my leg)
- our experience in future without mentioning the exact time (I've been to London)
- We use Present Perfect with ever, never, just, yet, already, since

PAST SIMPLE OF BE

Statements	**Negatives**	**Questions**
I was	I was not	Was I?
You were	You were not	Were you?
He was	He was not	Was he?
We were	We were not	Were we?
They were	They were not	Were they?

PAST SIMPLE

Statements	**Negatives**	**Questions**
I worked	I did not work	Did I work?
You worked	You did not work	Did you work?
He worked	He did not work	Did he work?
We worked	We did not work	Did we work?
They worked	They did not work	Did they work?

Past Simple is used to describe

- finished events in the past (yesterday, a week ago, last Monday, last year, in 2002)

PAST SIMPLE PASSIVE

Statements	**Negatives**	**Questions**
I was taught	I was not taught	Was I taught?
You were taught	You were not taught	Were you taught?
He was taught	He was not taught	Was he taught?
We were taught	We were not taught	Were we taught?
They were taught	They were not taught	Were they taught?

MODALS

CAN

Statements	**Negatives**	**Questions**
I can swim	I cannot swim	Can I swim?
You can swim	You cannot swim	Can you swim?
He can swim	He cannot swim	Can he swim?
We can swim	We cannot swim	Can we swim?
They can swim	They cannot swim k	Can they swim?

We use can to describe
- ability (I can swim)
- possibility (Can you come to me tomorrow?)

MUST

Statements	**Negatives**	**Questions**
I must leave	I mustn't leave	
You must leave	You mustn't leave	
He must leave	He mustn't leave	
We must leave	We mustn't leave	
They must leave	They mustn't leave	

We use Must to describe
- necessary or important actions (I must work, I don't want to fail the exam)
- certainty (He must be in the garden)

HAVE TO

Statements	**Negatives**	**Questions**
I have to leave	I don't have to leave	Do I have to leave?
You have to leave	You don't have to leave	Do you have to leave?
He has to leave	He doesn't have to leave	Does he have to leave?
We have to leave	We don't have to leave	Do we have to leave?
They have to leave	They don't have to leave	Do they have to leave?

We use have to describe a rule made for us by somebody (We have to wear a uniform.)
We can use have to when we talk about necessity (I have to work, I don't want to fail the exam.)

SHOULD

Statements	**Negatives**	**Questions**
I should leave	I should not leave	Should I leave?
You should leave	You should not leave	Should you leave?
He should leave	He should not leave	Should he leave?
We should leave	We should not leave	Should we leave?
They should leave	They should not leave	Should they leave?

Should is used for advice (I think you should read more.)

MAY

We use may for possibility or uncertainty

MODALS - PAST

COULD

Statements	**Negatives**	**Questions**
I could leave	I could not leave	Could I leave?
You could leave	You could not leave	Could you leave?
He could leave	He could not leave	Could he leave?
We could leave	We could not leave	Could we leave?
They could leave	They could not leave	Could they leave?

We use could to describe
- past abilities (She could read when she was six.)
- present time possibility (He could be in the garden)

HAD TO

Statements	**Negatives**	**Questions**
I had to leave	I didn't have to leave	Did I have to leave?
You had to leave	You didn't have to leave	Did you have to leave?
He had to leave	He didn't have to leave	Did he have to leave?
We had to leave	We didn't have to leave	Did we have to leave?
They had to leave	They didn't have to leave	Did they have to leave?

We use had to describe past obligation (I had to do a lot of work yesterday.)

PLURAL NOUNS

Cat – cats, box – boxes, potato – potatoes, family – families, play – plays,

IRREGULAR PLURALS

Knife – knives
Man-men
Woman – women
Child – children
Tooth – teeth
Foot – feet
Mouse – mice
Sheep – sheep

LATIN AND GREEK PLURALS (MEDICAL WORDS)

Vertebra – vertebrae
Bacterium – bacteria
Coccus – cocci
Phenomenon – phenomena
Apex - apices
Diagnosis - diagnoses

Carcinoma – carcinomata

NUMERALS

CARDINAL

One	Eleven	Twenty-one
Two	Twelve	Twenty-two
Three	Thirteen	thirty
Four	Fourteen	forty
Five	Fifteen	fifty
Six	Sixteen	sixty
Seven	Seventeen	seventy
Eight	Eighteen	eighty
Nine	Nineteen	ninety
Ten	Twenty	One (a) hundred

101 – a hundred and one
200 – two hundred
999 – nine hundred and ninety nine
1,000 – a (one) thousand
1,001 – a thousand and one
999,999 - nine hundred and ninety nine thousand nine hundred and ninety nine
1,000,000 – a (one) million
2,000,000 – two million

ORDINAL

First	Eleventh	Twenty-first
second	Twelfth	Twenty-second
Third	Thirteenth	Thirtieth
Fourth	Fourteenth	Fortieth
Fifth	Fifteenth	Fiftieth
Sixth	Sixteenth	Sixtieth
Seventh	Seventeenth	Seventieth
Eighth	Eighteenth	Eightieth
Ninth	Nineteenth	Ninetieth
Tenth	Twentieth	One (a) hundredth

FRACTIONS
½ - a half
¼ - a quarter
¾ - three quarters
½ - one and a half
1.5– one point five
2.25 – two point two five

PHONE NUMBERS
35 00 7 89 – three five double o seven eight nine

DATES
2/11/99 – the second of November (November the second) nineteen ninety-nine

YEARS
1999- nineteen ninety-nine
2001 two thousand and one

ADJECTIVES

Positive	**Comparative**	**Superlative**
One syllable words		
long	Longer	The longest
big	Bigger	The biggest
dry	Drier	The direst
Two and more syllable words		
modern	More modern	Most modern
interesting	More interesting	Most interesting
exceptions		
Ending in –y		
happy	Happier	The happiest
Irregular		
good	Better	The best
bad	worse	The worst
little	less	The least

Comparatives compare two things ***(Lisa is older than Clara***)
Superlatives compare one thing in a group with all the other things

IRREGULAR VERBS

Infinitive	**Past simple**	**Past participle**
arise	arose	arisen
awake	awoke	awaked
be	was	been
bear	bore	born
beat	beat	beaten
become	became	become
begin	began	begun
bend	bent	bent
bind	bound	bound
bite	bit	bit(ten)
bleed	bled	bled
blow	blew	blown
break	broke	broken
bring	brought	brought
build	built	built
burn	burnt	burnt
catch	caught	caught
choose	chose	chosen
come	came	come
cost	cost	cost
cut	cut	cut
do	did	done
draw	drew	drawn
drink	drank	drunk
drive	drove	driven
eat	ate	Eaten
fall	fell	fallen
feed	fed	fed
feel	felt	felt
fight	fought	fought
find	found	found
fly	flew	flown
forbid	forbade	forbidden
forget	forgot	forgotten
forgive	forgave	forgiven
freeze	froze	frozen
got	got	got
give	gave	given
go	went	gone
grow	grew	grown
have	had	had
hear	heard	heard
hide	hid	hidden
hold	held	held
hurt	hurt	hurt
keep	kept	kept
know	knew	known

lay	laid	laid
lead	led	led
leave	left	left
lie	lay	lain
lose	lost	lost
make	made	made
meet	met	met
pay	paid	paid
put	put	put
read	read	read
ride	rode	ridden
ring	rang	rung
rise	rose	risen
run	ran	run
say	said	said
see	saw	seen
seek	sought	sought
send	sent	sent
set	set	set
shake	shook	shaken
shoot	shot	shot
show	showed	shown
shrink	shrank	shrunk
sing	sang	sung
sit	sat	sat
sleep	slept	slept
smell	smelt	smelt
speak	spoke	spoken
spend	spent	spent
spread	spread	spread
stand	stood	stood
sting	stung	stung
strike	struck	struck
swim	swam	swum
take	took	taken
tear	tore	torn
tell	told	told
think	thought	thought
throw	threw	thrown
wear	wore	worn
write	wrote	written

TAPESCRIPTS

Unit 5. Ex. 5.

1. The three types of muscles are striated, voluntary and skeletal.
2. All muscles are responsible for body movement.
3. The muscles of the body are controlled differently.
4. The heart is composed of a special muscle.
6. Skeletal muscles move the bones and internal organs.
7. In spite of different structure all muscle fibers are arranged in a similar way.
8. In spite of different functions all muscles have the same structure.
9. The skin protects the body from microorganisms.
10. There is a special structure in the skin, which is responsible for thermoregulation.
11. The function of the skin is to cover the body.
12. Bacteria may die in acid environment.

Unit 8, Ex. 2.

a) The blood has many functions in the organism.
b) Some methods of diagnosis are based on the properties of the blood.
c) Blood is carried through the arteries and veins.
d) Erythrocytes are also called formed elements.
e) Erythrocytes are red blood cells.
f) Hemoglobin is a type of protein.
g) Hemoglobin is the substance, which is responsible for blood clotting.
h) In healthy people the number of leukocytes is constant.
i) Thrombocytes are responsible for blood coagulation.

Unit 10, Ex. 3

a) What major work is performed by the urinary system?
b) What are two regions of the kidneys?
c) Where does the process of reabsorption take place?
d) Where are the kidneys located?
e) What is urea?
f) What do the kidneys do?
g) Where is the urinary bladder situated?
h) What organs does the urinary system consist of?

Unit 13, Ex. 2.

a) The organs of the endocrine system are responsible for regulation of many vital functions of the organism.
b) The hormones secreted by the endocrine system are released into the ducts and outside the body.
c) The endocrine system consists of the thyroid gland, parathyroid glands, adrenal glands, pancreas, pituitary gland, ovaries in female, testes in male, pineal gland, thymus gland, sweat, mammary, mucous, salivary, and lachrymal glands.
d) Thyroxin inhibits the metabolic rate and increases heat loss.
e) Parathyroid hormone is responsible for calcium content in the organism.
f) The adrenal gland produces several hormones to perform one function.
g) The hormones produced by the pancreas are important for sugar metabolism.

Unit 15, Ex. 2 .

I.: Well Mr. Kovalenko. We've got your application. And now I would like to ask you several questions. Where do you live now?
K.: In Lviv.
I.: And how old are you?
K.: I am 37. I was born on June the first, nineteen seventy two.
I.: What university did you graduate from?
K.: Lviv Medical University. It was in 1995.
I.: Who do you work with at the moment, Mr. Kovalenko?
K.: I work for Western Pharmaceuticals as a product manager.
I.: And how long have you worked for them?
K.: I have been with them for three years.
I.: And what did you do before?
K.: I did a three-year internship and then worked as an internist for a district hospital.
I.: Have you ever been abroad?
K.: Yes, in Germany and in France.
I.: Do you speak German and French?
K.: Yes. My German is fluent, but French is elementary.
I.: Have you got a driving license?
K.: Yes, I drive a car and a motorbike.

Unit 15, Ex. 4 .
1). What term is used for the organisms which consist of one cell?
2). What term is used for organisms consisting of many cells?
3). Which of the mentioned organisms can consist of many cells?
4). Which of the mentioned causative agents are not cells?
5). Which of the mentioned organisms resemble animals?
6). What recently discovered causative agents are mentioned in the text?
7). Which of the mentioned organisms can be demonstrated using staining?
8). What kind of microscope can give a picture of viruses?

Unit 17, Ex. 13.

Are you ready to order, sir?
Have you got anything to declare?
My name is N. I'd like an appointment with the doctor.
I'd like to make a reservation for next Saturday night.
Have you been in before?
What's the purpose of your visit?
Anything to drink?
What's brought you along today?
How long are you going to stay in the country?
Can you come at 3 today?
I was wondering if you have a double room for tonight.
How would you like to pay?
OK. You are a new patient then.
We had a reservation for this weekend.
Hallow. Can I help you?
Where are you going to reside?

Your flight is boarding at gate 1.
There is not much on the menu here.
Doctor Brown's surgery.
Are you wearing any metal?
What's the matter?
Good evening. Two?
Single or return?

Навчальне видання

ПРАКТИКУМ З АНГЛІЙСЬКОЇ МОВИ ДЛЯ СТУДЕНТІВ-МЕДИКІВ

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