UNIVERSITY OF TUNIS EL-MANAR
FACULTY OF MEDICINE OF TUNIS

PCEM2

MEDICAL ENGLISH WORKBOOK

ACADEMIC YEAR 2016-2017

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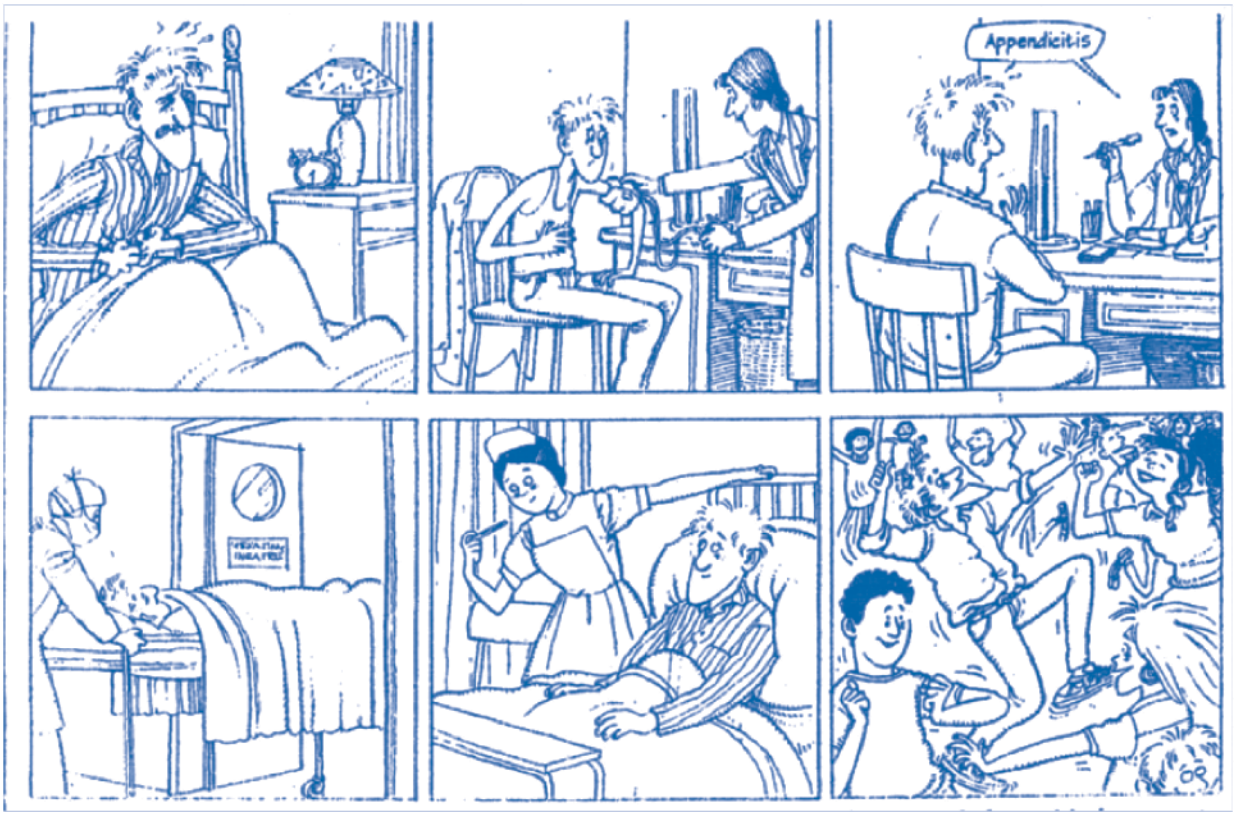
MEDICAL ENGLISH

UNIT ONE
WARMING UP

WORD FAMILIES: SICKNESS AND HEALTH



A - LOOK AT THE PICTURE STORY AND FILL IN THE SPACES BELOW WITH THE CORRECT FORM OF WORDS FROM THE LIST:

check **cure** **diagnose** **examine** **heal** **operate** **test** **treat**

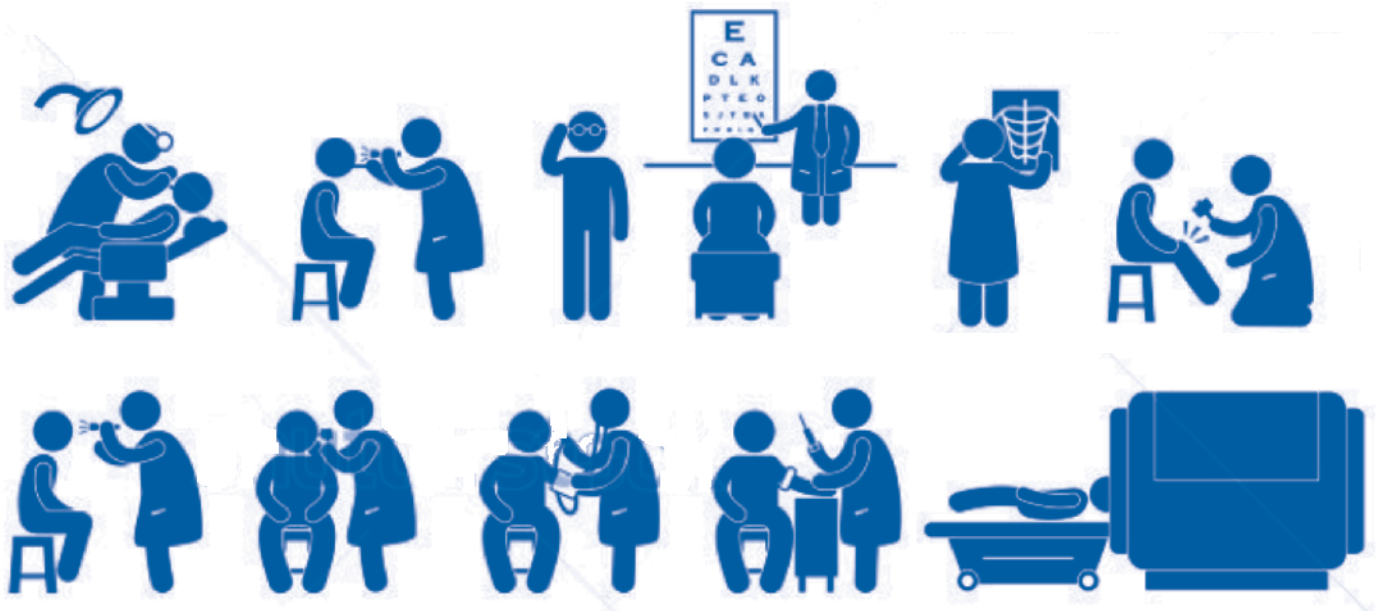
Simon woke up one morning with a terrible pain in his side. He was rushed to hospital, where a doctor _____ _____him. She_____his blood pressure and pulse and carried out a number of other_____before she_____appendicitis. He asked if it could be_____with drugs, but she recommended immediate surgery. The surgeon confirmed her_____and agreed to_____After the_____, his wound was slow to_____and he had to have further_____ Finally, he was completely_____, and he could lead a normal life again, but he had to see his doctor for a_____-up after six months.

B - THINK ABOUT THE DIFFERENCE BETWEEN THESE PAIRS OF VERBS:

cure/heal **test/examine** **treat/operate** **treat/cure**
check/test **diagnose/examine** **check/examine**

Which word means each of the following?

1- to say what is wrong: _____
2- to make someone better: _____
3- to try to make someone better: _____
4- to get better (for a wound): _____
5- to look at carefully: _____
6- to see if someone is right: _____
7- to carry out an experiment: _____
8- to perform surgery: _____



WRITING:

Have you had any medical experiences similar to Simon's? Tell your story to the rest of the class.

BASIC MEDICAL TERMS (1):

Match the definitions with the terms. Write the letters in the grid below:

1	Disease characterized by abrupt or sudden onset, usually with severe symptoms. Acute disease, as a rule, lasts a comparatively short time-no more than a few weeks.	a	Deficiency
2	Disease characterized by longer duration, often months or years. It is usually associated with symptoms of less severe intensity.	b	Congenital
3	Disease that is transmissible by direct or indirect contact with infection.	c	Acute
4	Disease that occurs during or after an illness and has the same cause as the original disease or results from changes produced by the original disease.	d	Endemic
5	Disease present in an infant at birth; it may be caused by hereditary factors or result from a prenatal condition or disease.	e	Communicable
6	Highly transmissible disease.	f	Epidemic
7	Disease resulting from a lack of vitamins or minerals in the diet or a failure to absorb vitamins or minerals from food.	g	Chronic
8	Disease that occurs continuously or recurrently in a particular geographic region.	h	Contagious
9	Disease that attacks simultaneously a large number of persons living in a particular geographic region.	i	Functional
10	Disease in which there is no significant anatomical change in the tissues or organs to account for the change in function or the performance of the body.	j	Complicating

1	2	3	4	5	6	7	8	9	10

CYTOLOGY

EXERCISES

A- FILL IN THE BLANKS WITH WORDS FROM THE BOX:

cellular with sex histology activities derangements biology embryo

Cytology is a branch of _____ concerned _____ the study of the structure and function of cells as individual units, supplementing _____, which deals with cells as components of tissues. Cytology is concerned with the structure and _____ of the various parts of the cell and cell membrane; the mechanism of cell division; the development of _____ cells, fertilization, and the formation of the _____; cell _____ such as those occurring in cancer; _____ immunity; and the problems of heredity.

B- CHOOSE THE CORRECT ALTERNATIVE:

Until modern times, cytology ***is/was*** concerned primarily with the ***microscopic/ microscopical*** observation of ***stained/ staining*** dead cells and the correlation of such observations ***with/to*** known ***physiologic/physiological*** phenomena. Recently, new procedures have ***been/were*** introduced by ***which/whom*** the living cell can be observed and studied. The phase-contrast microscope provides a ***mean/means*** of studying the living cell in action ***with/without*** the use of dyes. Microdissection, microinjection, and microchemistry ***furnish/are furnishing*** methods for ***drawing/drewing*** off minute amounts of living protoplasm through tubes a half micrometer ***in/of*** diameter and ***subjecting/objecting*** them to analysis.

C- PUT THE WORDS IN PARENTHESES IN THEIR CORRECT FORM:

Cytology is important in modern medicine, especially in the (to diagnose) _____of diseases by examination of the cells (to occur)_____in the various body fluids. The (to determine)_____of the number and proportion of the (to differ)_____ types of cells in the blood, by a blood count, is important in diagnosing acute (to infect)_____ and other diseases. (To vary)_____in the size and shape of the red blood cell indicatethe presence of sickle-cell anemia if the cell is half-moon (to shape)_____; pernicious anemia, if it is very large; or iron-deficiency anemia if it is very small. The type of disease may also be determined through cytology, as, for example, in (to distinguish)_____the various types of meningitis by (to examine)_____of the cells present in the cerebrospinal fluid.

TRANSLATION OF MEDICAL TERMINOLOGY

Watch the video sequence and complete the table:

French	English
membrane plasmique	_____
_____	extracellular matrix
_____	inside the cell
appareil de golgi	_____
_____	lysosome
centrioles	_____
microtubules	_____
_____	centrosome
_____	mitochondrion
réticulum endoplasmique rugueux	_____
_____	smooth endoplasmic reticulum
_____	ribosomes
noyeau	_____

MEDICAL EQUIPMENT:

A- WRITE THE NUMBER OF EACH PICTURE NEXT TO THE SUITABLE DEFINITION:

a_____A small electronic message-receiving device, often with a small screen that beeps, flashes or vibrates to let the user know that somebody is trying to contact them.

b_____A machine that keeps air moving in and out of the lungs of a patient who cannot breathe unaided.

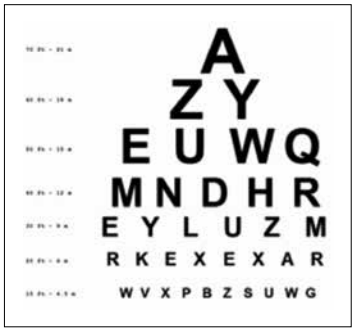
c_____A dressing for wounds made of loosely woven material such as cotton.

d_____A scanner that uses magnetic resonance imaging to obtain high-contrast detailed images in any plane of the tissues of the body.

e_____An examination of an internal body, especially a fetus in the womb, using ultrasound technology.

f_____A chart for vision testing on which are printed rows of letters and numbers in decreasing size from top to bottom.

1- Snellen chart



2- gauze

3- ventilator

4- MRI scanner

5- pager

6- ultrasound scan

B- MATCH THE SUITABLE WORD WITH THE CORRESPONDING PICTURE:

1- LED exam light
2- scale
3- dental equipment
4- diagnostic otoscope
5- bone marrow biopsy needle
6- infant incubator
7- surgery bed
8-X-ray film processor
9-flexible endoscope
10- oxygen regulator
11-vital signs monitor
12- X-ray image viewer
13-enteral feeding tube
14- syringe pump

a_____

b_____

c_____

d_____

e_____

f_____

g_____

h_____

i_____

j_____ k_____

l_____

m_____

n_____

C - REORDER THE SCRAMBLED LETTERS TO GET THE CORRECT NAME OF THESE MEDICAL EQUIPMENTS:

h o e c e o s p t s t

_____

y g m h o a r n s o p e m e t m

_____

t o e c r c a l h r g i o r p a e d

_____

r i a i f t c i l a / d y i n e k

_____

a l c s l e p

_____

t r d e i r l b l i a f o

_____

o c s c p e o l o p

_____

l e s u p / t i r e o x e m

_____

c l e d a m i / t s c u o n i

_____

E- STUDY THESE EXAMPLES:

A microscope is an instrument ***which is used for*** magnify***ing*** objects.

A microscope is an instrument ***used for*** magnify***ing*** objects.

A microscope is an instrument ***for*** magnify***ing*** objects.

Note:

An electron microscope is a ***machine*** that uses beams of electrons focused by an electron lens to create a magnified image on a fluorescent screen or photographic plate.

** It is referred to as a machine because it does or produces something, the reflection of which is then recorded or measured.*

** "Device" is a general word which can be used in nearly all cases.*

F- MATCH THESE DESCRIPTIONS OF FUNCTION WITH THE DIAGRAMS, AND INCLUDE EACH ONE IN A FULL SENTENCE LIKE THE EXAMPLES:

a- _____for administering a controlled electric shock to the chest or heart to correct a critically irregular heartbeat that cannot drive the circulation.

b- _____used by doctors for examining the sounds in the chest or other parts of the body.

c- _____used with a stethoscope for measuring blood pressure.

d- _____which is used to maintain a continuous check on the vital oxygen levels in the blood of an anaesthetized patient during an operation. A small transducer device is attached to the finger of the patient and linked to the equipment by a light wire.

e- _____for recording the electrical activity of the heart muscle via electrodes placed on the chest, and displaying it as a visual record.

f- _____like a small light knife used for cutting or incising the body.

g- _____which is used in case of severe renal failure for removing waste products from the patient's blood.

h- _____used especially for cleaning the airway in some emergency medical cases.

i- _____is a magnifying and photographic instrument which is used for examining the vagina.

D- WRITE THE ENGLISH OR FRENCH EQUIVALENT:

1- marteau à reflexe

_____

2 - anesthesia machine

_____

3 - blood pressure cuff

_____

4- lampe à fente étapes

_____

5 - operation microscope

_____

6 - chariot de réanimation

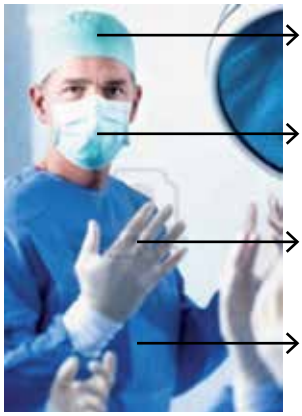
_____

7 - X-ray aprons

_____

8 - abaisse langue

_____



9 - calot

_____

protective mask

_____

gants

_____

scrub suit

_____

10 - steps

_____

11 - ward screen

_____

12- nutrition parentérale

13 - crutches

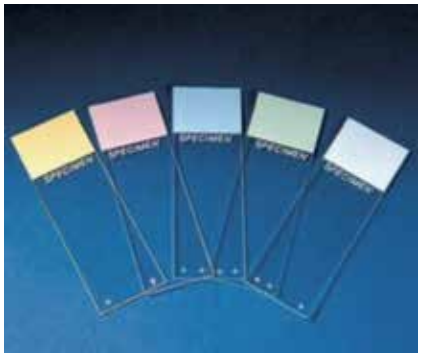
14 - bandage shears

15- platre

16 - pansement

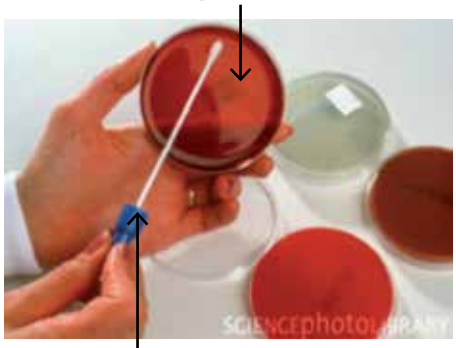
17 - first aid kit

18- microscope slides



19 - éprouvette

20 - petri dish



écouvillon

LANGUAGE STUDY: THE POSSESSIVE

A - POSSESSIVE CASE:

- Nouns not ending in **s** → add **'s**
- Nouns ending in **s** → add'

Singular	**Plural**
man's	men's
horse's	horses'
Jones'	Joneses'*

* Some authorities say the possessive of a singular proper noun is formed by adding ***'s*** even when the noun ends in s: e.g. **Jones's** - but a triple sibilant is always avoided: e.g. **Jesus'**

- Compound nouns → add **'s** to the end of the compound:
  sister-in-law's home John Doe, Jr.'s report patent counsel's decision
- Joint possession → add ***'s*** to the last element of a series:
  Dr. Wayne and Dr. Tom's office (one office)
- Individual possession → add ***'s*** to each element:
  editor's, proofreader's, and typist's tasks Doctors' and nurses' duties

B - POSSESSIVE OF INANIMATE OBJECTS:

In the past, the possessive case ('s) was not acceptable for inanimate nouns. Instead the preposition of was preferred:

Efficiency of the drug rather than the drug's efficiency

Except:

- Inanimate words representing a collection of animate beings: Clinic's profits
- Words expressing measure or time: 2 hours' operation

In the present, no **'s** no **of** for inanimate objects:

Clinic profits University curriculum 2 hours operation

Still, you can use **'s** particularly if the object has some life-like qualities:

Computer program's name Earth's rotation

Sometimes, it is a matter of idiom. For example we do not say:

Systems' analyst table's top

C - EXPRESS POSSESSION:

1- referral / a patient

2- patient / care

3- treatment/CVA and treatment / diabetes

4- treatment / room

5- People in hospitals are dying because of *a shortage / medicine*.

6- The embryos are transferred to *the woman/or a surrogate/uterus*. (individual possession)

7- care / outpatient could be provided in a *doctor/office*.

8- Intrauterine inseminations are done using *the partners/specially treated/sperm*.

9- Sometimes *the embryos/culturing* is prolonged for further 5 days.

10- anesthetist / and / surgeon / task(*individual possession*)

11- Dr. Bahri / Dr. Mrad / office (joint possession)

12-The concept / *the mobile intensive* care unit has been realized.

13- The majority of today / cancer cases are treated with anticancer drugs, either alone or in combination with surgery.

14-Suctioning would be needed in case the patient/nostrils flare out when breathing in.

GRAMMATICAL TRANSLATION: FOCUS ON "THE POSSESSIVE"

1-le reflexe de Snellen

2-durée du séjour à l'hôpital

3-en cas de surdosage

4- lit courant d'hôpital

5- observance du traitement

6-bilan de santé

7- réparation de l'ADN par excision resynthèse

8-bureau des entrées de l'hôpital

9-origine des gains et des pertes d'ions H+

10- la pathogénicité des bactéries

11-Les scientifiques ont toujours su que le sexe d'une personne est déterminé par 2 chromosomes X.

12-Un médecin généraliste peut traiter les problèmes généraux des patients, soit dans un cabinet soit, parfois, chez les patients.

13- À l'hôpital, le chef de service hospitalier est un médecin ou un pharmacien qui est chargé de la coordination d'un service.

14-Les services d'urgences des hôpitaux ont été améliorés par le recrutement des techniciens médicaux d'urgence et des paramédicaux d'urgence.

15-La fabrication, la différenciation et la maturation des lymphocytes s'effectuent pendant la vie embryonnaire et fœtale, dans les organes lymphoïdes centraux.

2

OPPORTUNITY AND REALITY

In his report, *Learning from Bristol* (2001), Prof. Sir Ian Kennedy recommended that:

> Access to medical schools should be widened to include people from diverse academic and socio-economic backgrounds. Those with qualifications in other areas of health care and those with educational background in subjects other than science, who have the ability and wish to, should have greater opportunities than is presently the case, to enter medical school.

In fact, most medical schools will consider applicants without a strong science background, especially for some graduate entry courses.

Most applicants come from professional or clerical backgrounds. Many others still see medicine as a closed shop in which, if you do not have such a background, you stand little chance of either entry or success. On the contrary, research has shown that once academic ability has been discounted, neither social class, age, medical relatives, nor type of secondary school affect chances of entry to medical school. But examination results depend partly on educational opportunity at school, not to mention encouragement to study at home. Many medical schools try to take educational opportunity into account.

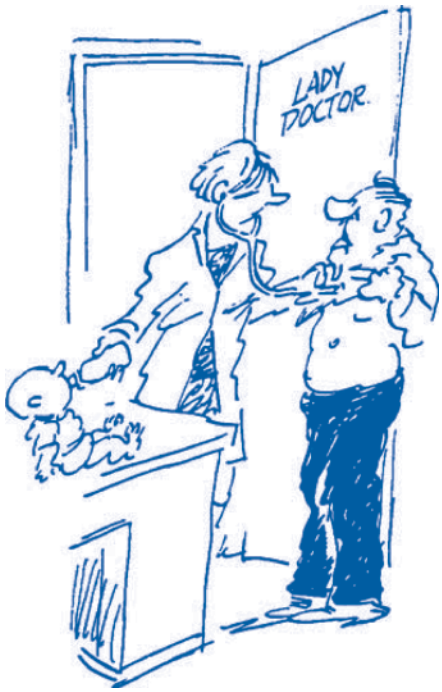
The fact of the matter is that many people simply do not believe they have a real opportunity to become a doctor. Many who might well make excellent doctors and would broaden the perspectives and insights of the medical profession as a whole simply do not apply. If they do not apply, they cannot be considered.

Academic achievement is the most important determinant of success in selection. Some medical schools make their final selection on grades alone; most also take account of attitudes, personality, and broader achievements, qualities which being difficult to measure require judgment to assess and therefore cannot be proved to be absolutely fair. Nevertheless, an immense amount of effort is put into making selection as fair as possible.

The long course of study, diminishing educational grants, mounting student debts, and course fees also tend to deter those without financial backing. It is extremely difficult to work one's way through medical school. Spare time jobs are difficult to find, and the course leaves little time for them, especially in the later years with on call duties in hospital. The fact that the job is secure at the end of the road and is sufficiently well paid for debts to be repaid seems just too far away to be any consolation.

OPPORTUNITIES FOR WOMEN

Universities across the world were slow to give women equal opportunity to higher education, and medicine was perhaps the slowest professional course of all. Several UK medical schools first admitted women as students only 56 years ago (except during the world wars when they were unable to fill all their places with men).



Women now have equal opportunity to enter medicine. In 1991, for the first time, more women than men were admitted to medical school in the UK, and the following year, for the first time women predominated among both applicants and entrants. This trend continues, and in 2006 the proportions of women and men in both applications and entrants was about 56% women and 44% men. Such is the turn around of the imbalance of men and women students that some admissions tutors are asking if the time has come to consider ways of encouraging male applicants, although there is as yet no talk of quotas or positive action for men!

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MEDICAL ENGLISH

UNIT TWO LISTENING: UNDERSTANDING A LECTURE

UNDERSTANDING A LECTURE

1. FILL IN THE BLANKS:

Listen to this lecture which is about chemical terminology and the composition of foodstuffs. As you listen, look at the table given in your book then fill in the missing data.

SECTION 1

• Title of the lecture: _____

SECTION 2

• A molecule is a structure formed when _____

• Atoms are _____

• Elements are substances which _____

_____

• A compound is a _____

_____

SECTION 3

• The elements are represented by _____

• Compounds can be represented in two ways:

-Firstly by writing _____ down in _____

-Secondly by drawing _____

• The lines joining elements in a formula are called _____

• The atoms may be joined together in branching _____ and also in _____

• DNA is the substance _____ which _____ which

_____

• The structure of DNA takes the form of _____

SECTION 4

The Constituents of foodstuffs:

• The 3 main types of macromolecules in foodstuffs are: _____

• Proteins are made up of _____

• Carbohydrates are made up of _____

• Fats are composed of _____ and are known as _____

SECTION 5

The Human Metabolism:

• When food is _____, the macromolecules are _____ their constituent molecules and absorbed as such.

• Amino acids are used to _____

• Sugars are broken down to _____ in a process called glycolysis.

• Fats provide a way of storing _____ and can be converted into _____ _____ in a process known as gluconeogenesis.

*sugars can also be converted into _____

2. FIND THE WORDS THAT MEAN:

Section 1: a large molecule such as that of a protein or polymer, made up of smaller components connected to one another: _____

Section 2: the basic unit a of matter: _____

Section 3: something in the form of a spiral or coil: _____

Section 4: constituent of protein: _____

Section 5: quantity saved for future use: _____

3. WRITE IN FULL LETTERS:

DNA: _____

4. GIVE THE PLURAL OF THESE IRREGULAR NOUNS:

datum: _____ formula: _____

nucleus: _____ helix: _____

5. FILL IN THE TABLE:

Noun	Adjective
fat	
	structural
glycolysis	

6. TRANSLATE INTO FRENCH:

a. You've been reading about the problems of nutrition and considering some aspects of the relation between dietary habits and disease.

b. Each atom of an element can make a certain number of bonds with other atoms. The number of each type of atom is constant and is known as its valency. Hydrogen, for instance, has a valency of 1, and carbon has a valency of 4.

c. Proteins form the main structures of human cells. They are found in meat and in some kind of foodstuffs such as beans.

d. Carbohydrates are found mainly in plants especially in so-called starchy food like cereals or root vegetables.

e. If too much fat or carbohydrate are eaten regularly, obesity may result. If not enough food is eaten to provide energy, the body will first of all use up its stores of fat. When these are exhausted, it will begin to break down the structural protein of which the tissues are composed, for amino acids can be used to create energy too. The individual will slowly waste away. You will begin now to consider the effects of starvation very soon.

15

OPPORTUNITY AND REALITY

Although it can still be argued that the medical profession as a whole is still male dominated, there is no doubt that as the trend towards more women students continues, this is being slowly but surely broken down by sheer force of the numbers of women doctors. Some specialities remain more challenging for women to succeed in than others, but some fields are naturally finding the majority of their new recruits are women.

In the past, careers advisers, parents, and applicants were understandably aware of the potential personal conflicts ahead between career and family at a time when, even more than today, women were left holding the baby while the man got on with his career. Times have changed, and society's attitudes to parenting are changing all the time. Also the conflict between career and personal interests is not confined to women and to bringing up a family. Some argue positively for medicine as being better placed than many other careers for resolving this conflict, as Dr Susan Andrew has done:

> Medicine is a most suitable career for intelligent, educated women who aspire to married life, because it carries far more opportunities for flexible working than other professions ... My message is: remember, women have struggled for centuries to have lives of their own and to be defined in terms of their own achievements, not someone else's.

MATURE STUDENTS

Age is statistically no disadvantage in application to medical school, but until recently that may well have been because few mature students have had the necessary academic and financial credentials to apply. The encouragement of the development of fast-track courses specifically for graduates has greatly improved the opportunity for mature students in medicine. Not all mature entrants to medicine are graduates but they have to apply to the standard course. Most medical schools welcome the contribution mature students make to the stability and responsibility of their year group and more widely within the medical school as a result of their greater experience, achievement, and sensitivity. Maturity helps in communication and empathy with patients, to the extent that many deans would prefer to take all their students over the age of 21 years. This acceptance is reflected by statistics – since 2000 the proportion of mature students applying to and entering undergraduate medicine has almost doubled. In 2005 the percentage of mature medical students (aged 25 or over at year of entry) reached 10% of the total.

Good organisation, a sufficient income, and an understanding partner with a flexible job (if any partner at all) are the foundations of successful medical study by mature students with family responsibilities. The early years of the course are no more difficult for medicine than other degree courses, except in that the intensity of lectures and practical work is greater than in most other subjects. Efficient use of time during the day and a regular hour or two of study most evenings (with more before examinations) should suffice. Some students manage to support themselves for a year or two by evening and weekend jobs. It is not easy and becomes more or less impossible during the later years, when the working year is 48 weeks. Most clinical assignments require one night or weekend in hospital every week or two. Two or three "residences" – for example, in obstetrics or paediatrics – may require living in a distant hospital for a week or two at a time, learning as one of the medical team by day and sometimes at night. An increasing number of schools send their students to district hospitals often some miles from the university town, for much longer periods of time than before. If this is likely to cause major problems with some students it is worth checking this out before you choose where to apply. The working day at that stage is long, starting at 8.00 am and finishing about 5.00 pm or later, with most weekends free. The elective period of 2 or 3 months is often spent abroad but may be spent close to home and does not necessarily entail night or weekend duty. Finally, several weeks as a shadow house officer involves residence in hospital at the end of the course.

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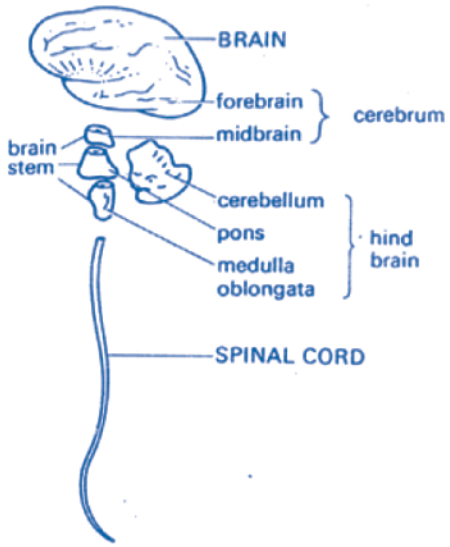
MEDICAL ENGLISH

UNIT THREE EXPRESSING STRUCTURE

SECTION 1 PRESENTATION

1. ANSWER THE QUESTIONS BELOW FROM THE FOLLOWING DIAGRAMS:



The nervous system *consists of* the central nervous system and the peripheral nervous system.

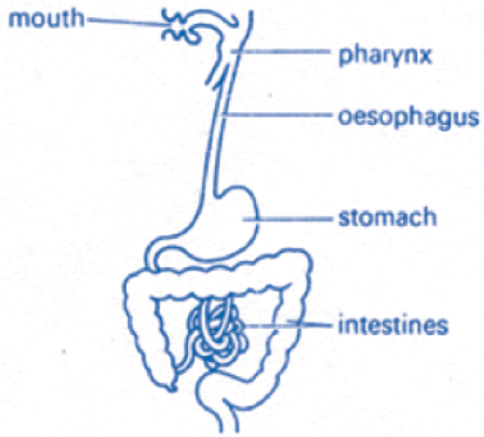
The central nervous system *is made up of* the brain and the spinal cord.

Both the spinal cord and the brain *are composed of* nerve cells.

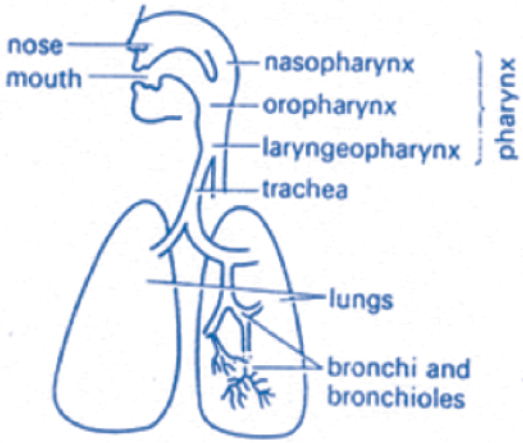
The forebrain, the midbrain and the hindbrain *make up* the brain.

The pons, the cerebellum and the medulla oblongata *compose* the hindbrain.

The brain *contains* grey and white matter.



Digestive tract



Respiratory tract

a- What is the brain stem composed of?

b- What composes the cerebrum?

c- What does the digestive tract consist of?

d- What are the intestines made up of? (two parts)

e- Which three organs make up the small intestine?

f- Of what parts is the large intestine composed?

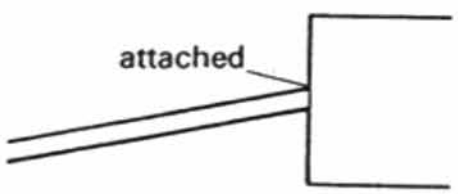
g- What does the respiratory tract consist of?

h- What makes up the pharynx?

i- What do the lungs contain?

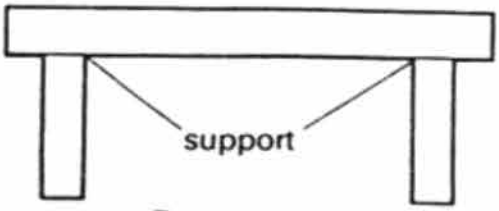
j- What does the skeletal system consist of?

2. READ:

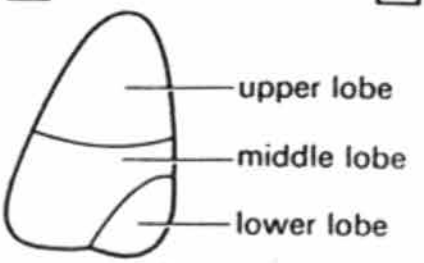


The body *is covered with* skin and hair.

The limbs *are attached to* the trunk.

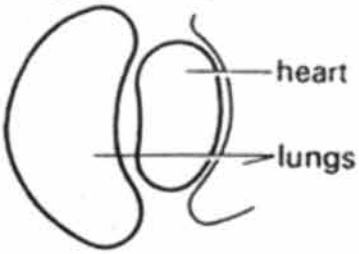


The body *is supported by* the legs.

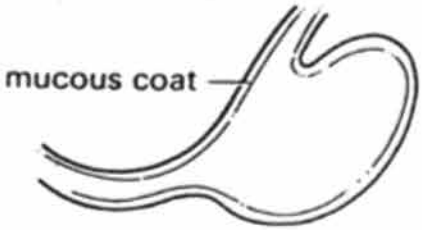


The lungs *are divided into* lobes.

Arteries *are filled with* blood.



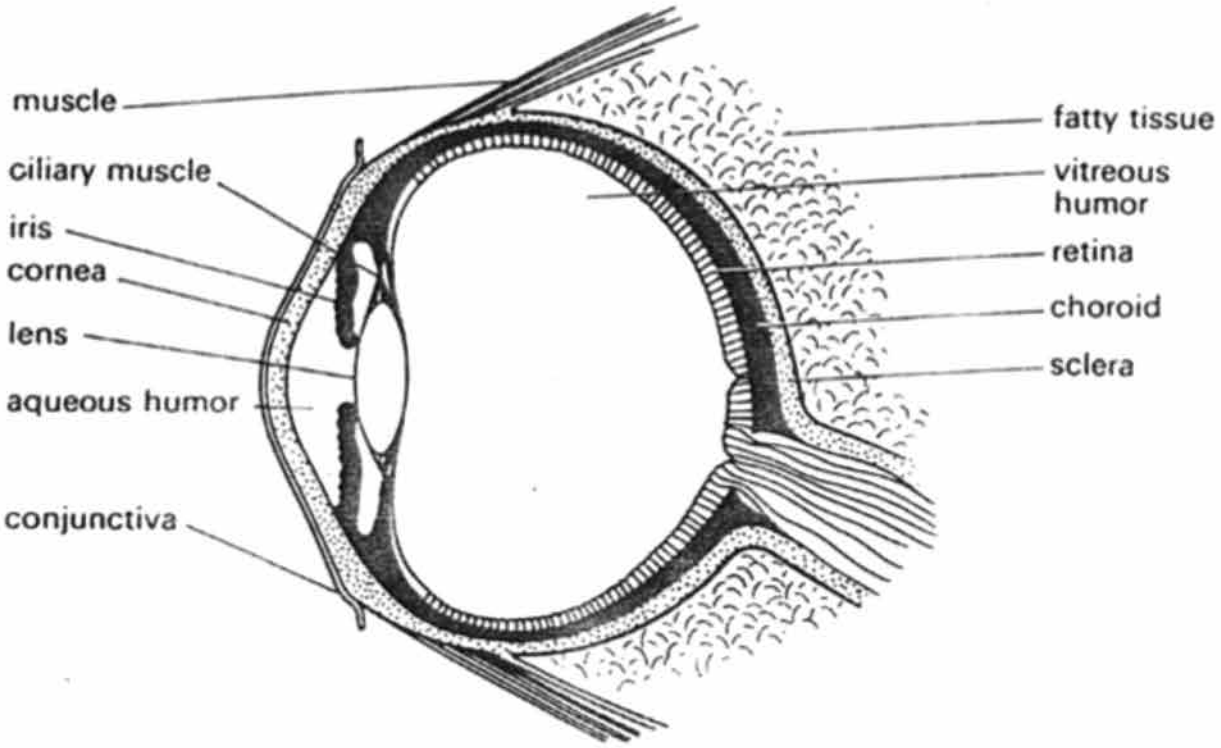
The heart *is surrounded by* the lungs.



The stomach *is lined with* a mucous coat.

The thorax *is separated from* the abdomen *by* the diaphragm.

Look at this diagram:



Horizontal section through the eyeball

Fill in the blanks with the appropriate expression:

is covered by(1)	is filled with(2)	contains(3)	is lined with(4)	is surrounded by(5)	divides(6)
	is supported by(7)	is attached to(8)	lines(9)	is separated from(10)	

a-The biconvex lens_____the cavity of the eye ball into two parts.

b-The posterior part_____the jelly-like vitreous humor.

c- The anterior part_____a watery fluid (aqueous humor).

d- The lens_____the ciliary muscles.

e- The choroid_____the retina.

f- The choroid_____the sclera.

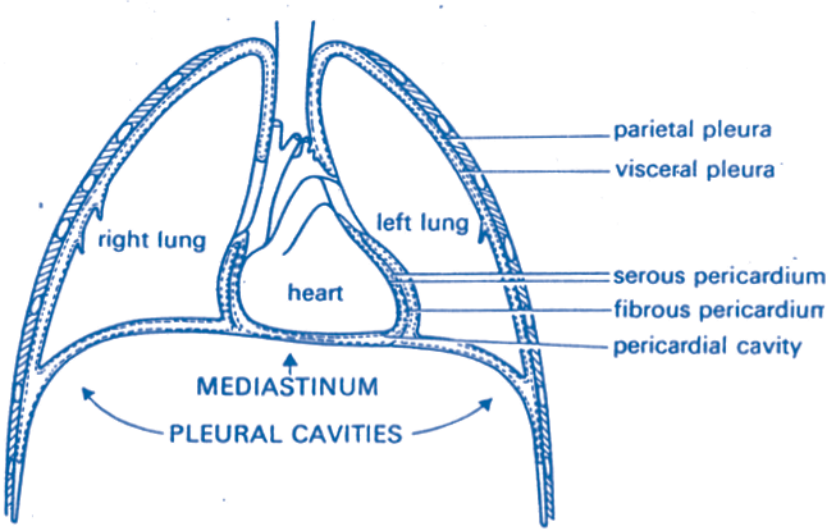
g- The sclera_____the orbit by six small muscles.

h- The eye_____fatty tissue.

i- The front of the eye ball_____the conjunctiva.

j- The vitreous humor_____the aqueous humor by the lens.

3. FILL IN THE BLANKS WITH THE APPROPRIATE EXPRESSION:



The cavities of the thorax and their linings

mediastinum(1)	covers(2)
is divided(3)	are covered(4)
pleural cavities(5)	lines(6)
is lined(7)	are surrounded(8)

a) The thorax_____into compartments.

b) The _____is the central compartment.

c) The mediastinum_____with the pericardium.

d) The lateral compartments are known as_____

e) The lungs_____by the pleura.

f) Parietal pleura_____the outer walls of the cavity.

g) Visceral (pulmonary) pleura_____the lungs.

h) All three compartments_____by the ribs.

Match each of these relative clauses with the sentences (a) to (e):

1-_____, which also surrounds the heart,_____

2-_____, which are called the mediastinum and the pleural cavities,_____

3-_____, which also lines the pleural cavities,_____

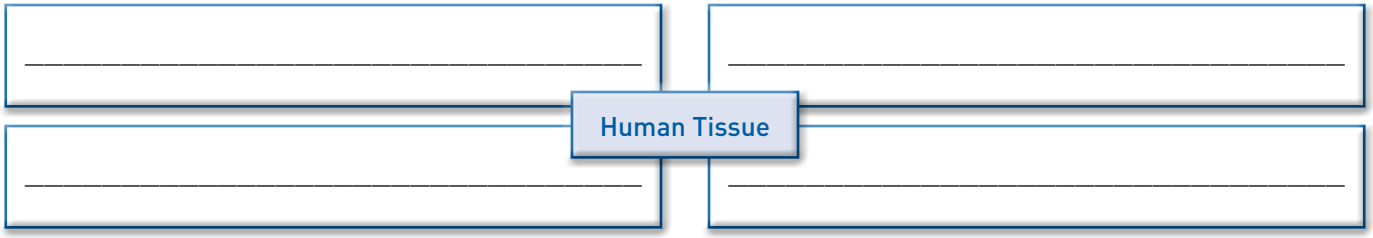
4-_____, which contain the lungs,_____

5-_____, which contains the heart, oesophagus, trachea, thymus and various blood vessels and nerves,_____

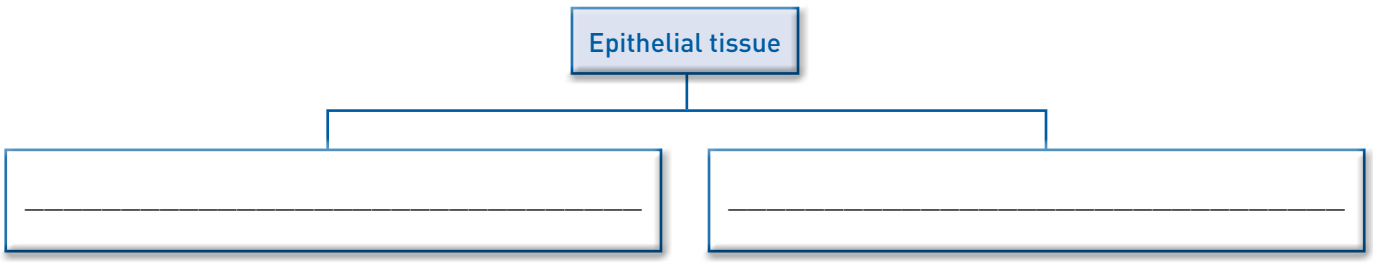
a	b	c	d	e

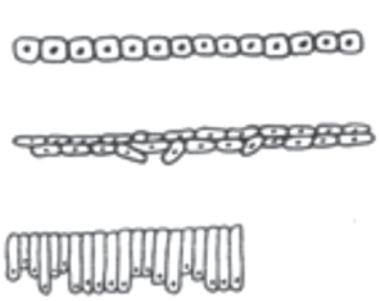
4- LABEL THE DIAGRAMS BELOW:

Tissue consists of living cells which are similar in structure and function, and non-living intercellular substance joining the cells together. Human tissue includes 4 main types: epithelial, connective, muscular and nervous tissue.



The tissue making up the outer layer of the skin, known as the epidermis, is the epithelial tissue, and so are the tissues lining systems such as the digestive, respiratory, urinary, etc..., (i.e. systems opening onto the body surface).
Tissue consisting of one layer of cells is called simple epithelial and tissue consisting of more than one layer is known as stratified epithelial tissue. Epithelial tissue can also be classified according to the shape of the cells at the surface as squamous (flat), cubic or columnar.





5- COMPLETE THE SENTENCES BELOW:

Tissue consists of living and non-living intercellular substance.

The intercellular substance joins tissue cells together.

We can also say:

Tissue consists of living and non-living intercellular substance which joins the tissue cells together.

a) Epithelial tissue makes up_____

b) Epithelial tissue_____the digestive system.

c) The respiratory system is a system which_____

Complete these definitions:

Example:

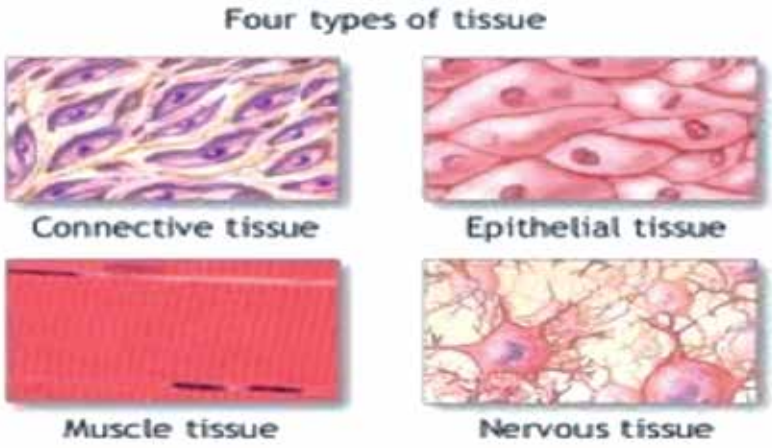
Simple epithelial tissue is epithelial tissue which consists of one layer of cells.

d) Stratified epithelial tissue is epithelial tissue which

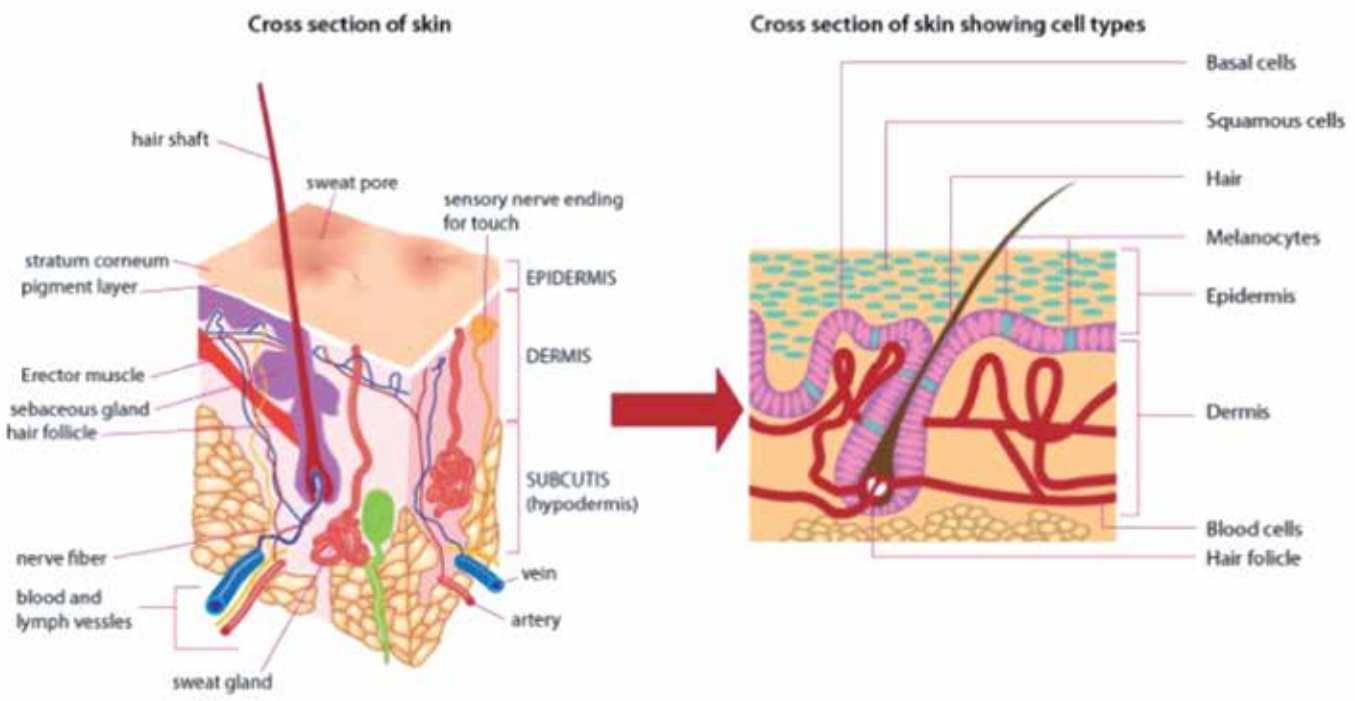
e) Squamous epithelial tissue consists of cells which

f) Cubic epithelial tissue consists of

g) Columnar epithelial tissue



6- COMPLETE THE SENTENCES BELOW:



The skin, or cutis, is a membrane made up of two layers, and attached to the subcutaneous tissues by collagen fibers. The outer layer is the dermis, composed of epithelial tissue developed from ectoderm. The epidermis has a deep layer of growing cells covered by a layer of dried dead cells. The inner layer is the dermis, composed of vascular connective tissue developed from embryonic mesoderm.

Note:

The skin is a membrane. The membrane is made up of two layers.

or: The skin is a membrane which is made up of two layers.

or: The skin is a membrane made up of two layers. (composition)

Complete:

a)_____is attached to the subcutaneous tissues.

b)The epidermis_____epithelial tissue.(composition).

c)The epithelial tissue of the epidermis_____ectoderm.(origin)

Write sentences about:

d)The composition of the deep layer of the epidermis.

_____

e)The covering of the deep layer of the epidermis.

_____

f)The composition of the dermis.

_____

g)The origin of the dermis.

_____

7. USE THE INFORMATION PROVIDED TO MAKE SENTENCES AS IN THE EXAMPLES:

thorax/large cavity/three compartments

The thorax is a large conical cavity divided into three compartments.

or: The thorax is a large conical cavity consisting of three compartments.

a) dermis/connective tissue/many blood vessels

_____

b) epidermis/layer of epithelial tissue/ dead and growing cells

_____

c) mediastinum/ thoracic cavity/pericardium

_____

d) eye/spherical organ/fatty tissue

_____

e) vitreous humor/jelly-like substance/posterior chamber of the eye

_____

f) small intestine/organ of digestion/duodenum, jejunum, ileum

_____

SECTION 3 READING

8 - READ THIS PASSAGE AND ANSWER THE QUESTIONS:

What are the mucous membranes, serous membranes and fibrous membranes composed of?

Membranes

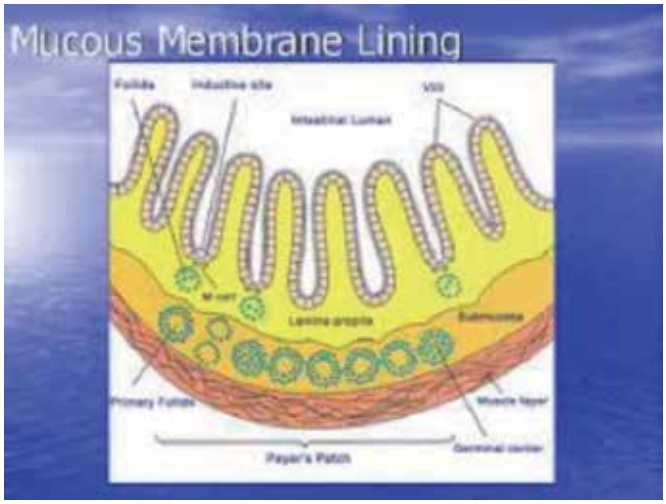
A membrane is a sheet of tissue which covers or lines a surface, or divides an organ into lobes. There are two types of membrane, epithelial and fibrous. Epithelial membranes include mucous membranes and serous membranes.

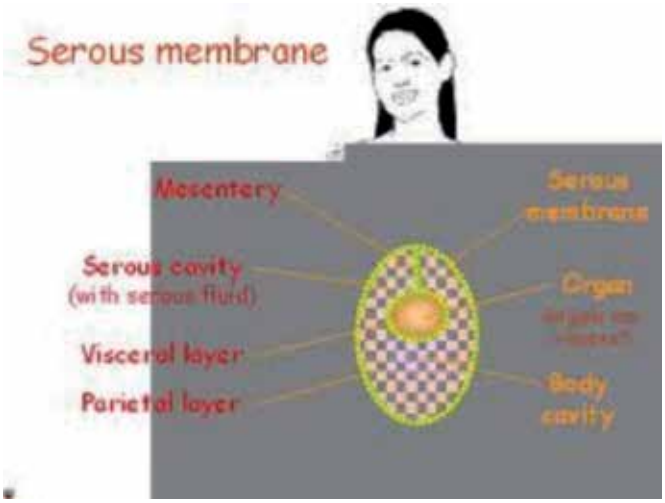
Mucous membranes consist of epithelial tissue with underlying connective tissue called the *lamina propria*. These membranes are wet and slippery, and are found lining the various tracts of the body which open on to the body surface.

Serous membranes are thin, transparent membranes that line closed cavities of the body. They consist of two walls, the parietal layer and the visceral layer, with a potential cavity between the walls which contains some fluid. Each wall consists of a thin layer or either loose connective tissue or fibroelastic tissue, covered with a layer of mesothelium (a kind of epithelium). Nerves and blood and lymph vessels are abundant in serous membranes.

Fibrous membranes are composed of connective tissue only. The *superficialfascia* (subcutaneous tissue), for example, is a combination of loose connective tissue and adipose tissue. It forms a continuous sheet under the skin of the entire body and is firmly attached to the dermis of the skin and to deeper tissues. *Periosteum* is composed of an outer layer

of dense connective tissue containing many blood vessels and a deeper layer adjacent to the bone which it surrounds composed of loose connective tissue containing bundles of collagenous fibres and a network of thin elastic fibres.





a) Draw a classification diagram of membranes.

b) What is an organ divided into lobes by?

c) What kind of tissue makes up the deeper layer of mucous membranes and what is its name?

d) What are open body tracts lined with?

e) What is the outer layer of serous membrane walls covered by?

f) What is the layer of tissue superficial to the superficial fascia called?

g) What does superficial fascia lie between?

h) What does the inner layer of periosteum consist of?

i) What does periosteum surround?

j) What are the differences in the composition of superficial fascia and periosteum?

k) Label these two diagrams:

bundles
a network

9- MAKE EIGHT SENTENCES FROM THIS TABLE BY PUTTING THE MIDDLE PARTS IN THE CORRECT ORDER:

a) A sheet of tissue	• attached to the dermis	• is called a membrane.
b) The lamina propria	• containing some fluid	• consists of connective tissue.
c) Membranes	• covering the surface	• are wet and slippery.
d) Membranes	• lining closed cavities	• are called serous membranes.
e) Connective or fibroelastic tissue	• made up only of connective tissue	• make up the walls of serous membranes.
f) A potential cavity	• lying under the epithelial tissue	• lies between the two layers of a serous membrane.
g) Membranes	• covered with mesothelium	• are called fibrous membranes.
h) The membrane	• lining open tracts	• is called the superficial fascia.

10- INDICATE WHAT MEMBRANE THE FOLLOWING CONSISTS OF:

	mucous membrane	serous membrane	fibrous membrane
a) the lining of the stomach			
b) the pericardium			
c) the pleura			
d) the lining of the mouth			
e) the deep fascia			
f) the sclera			
g) the peritoneum			
h) the lining of the trachea			

GRAMMATICAL TRANSLATION: FOCUS ON « ARTICLES »

1. J'aime l'anatomie. Je n'aime pas l'autopsie.

2. Elle a les pieds gonflés.

3. Quelle jolie clinique!

4. sans augmentation significative du risque

5. Sa mère est médecin ORL et son père est néphrologue.

6. Je vais toujours à la compagne le samedi.

7. Le français est menacé même dans les pays francophones.

8. Il ne voyage jamais sans kit de secours.

9. Pour arrêter le saignement, j'ai utilisé ma chemise comme compresse.

10. La maladie d'Alzheimer a été décrite pour la première fois par le neuropathologiste allemand Alois Alzheimer en 1906.

11. Les gens au plus haut risque de développer un diabète de type 2 ont des antécédents familiaux, aussi bien que d'autres facteurs de risque cardiovasculaires tels que l'hypertension artérielle, l'hypercholestérolémie, l'obésité et un style de vie sédentaire.

12. Le «plan hôpital 2007» est une série de mesures annoncées en France le 4septembre 2003, visant à moderniser l'offre de soins. Il s'agit notamment de réduire l'augmentation des dépenses de santé qui ne cesse de croître depuis plusieurs décennies.

BASIC MEDICAL TERMS (2):

Match the definitions with the terms. Write the letters in the grid below:

11	Disease transmitted from parent to offspring genetically.	k	Sporadic
12	Disease in which the cause is unknown.	l	Prognosis
13	Disease that results directly or indirectly from the patient's job	m	Idiopathic
14	Disease in which there are significant anatomical changes in the tissues or organs.	n	Primary
15	Disease that occurs more or less over the entire world at the same time.	o	Secondary
16	Term used in several ways to characterize disease. When an individual has several diseases, the term primary may refer to the initial disease or to the most important disease. Sometimes it is used to denote a disease or group of diseases for which there is no specific cause. At times it is used to indicate the site in which a pathological process begins.	p	Psychosoma-tic
17	Medical assessment of the probable outcome or the prospect for recovery of the disease.	q	Occupational
18	Disease that seems to be caused or worsened by psychological factors. It may or may not produce anatomical changes	r	Subacute
19	Disease that results from a definite contributing factor. For instance, secondary anemia may result from blood loss or blood destruction.	s	Pandemic
20	Disease that occurs in isolated cases in a locality where it is neither endemic nor epidemic.	t	Hereditary
21	Disease characterized by an onset that is not as abrupt as in the acute form and with symptoms less severe and of shorter duration than chronic.	u	Organic

11	12	13	14	15	16	17	18	19	20	21

17

OPPORTUNITY AND REALITY

Some mature students manage magnificently. One who started just over the age of 30 and had two children aged between 5 and 10 and a husband willing and able to adjust his working hours to hers had studied for A levels when she was a busy mother. Her further education college described her as the most academically and personally outstanding student that they could remember; she won several prizes on her way through medical school and qualified without difficulty. Another of similar age with four children and separated from her husband coped with such amazing energy and effectiveness, despite considerable financial hardship (and the help of a succession of competent and reliable au pairs) that she left everyone breathless. Exceptional these two may be, but it can be done, requiring as Susan Spindler commented in her book, Doctors to Be, "an unerring sense of priorities in her life, tremendous stamina and the capacity to concentrate briefly but hard".

Mature students are at a substantial financial disadvantage if they have already had a student loan for higher education. Even if eligible for bursaries or additional loans, those who have already achieved financial independence find their reduced circumstances tough.

Finance is only one of the problems facing mature students: to revert from being an independent individual to becoming one of a bunch of recent school leavers can be both hard and tiresome, although most mature students in medicine seem to cope with this transition remarkably well. Shorter courses (4 years) for some graduates have now been introduced at several universities, with students supported for the last 3 years by NHS bursaries. Better let a mature student, an Oxford graduate in psychology, give her own impressions:

The mature student's tale

I have always felt that the term "mature student" is vaguely uncomplimentary – almost synonymous with "fuddy old fart" or "bearded hippy". Personally I have never considered myself particularly "mature" in comparison with my year group, while others merely describe themselves as being slightly less immature. Some of us have had previous jobs ranging from city slicker to nurse or army officer, while others may have come straight from a previous degree or are supporting a family. Whatever the difference in background one common factor unites us all, we are convinced that medicine is now the career for us. Deciding this a little later than most brings its own particular problems.

To start with, the interview tends to be rather different to that of a school leaver. There are usually only three questions that the panel really want answering. Firstly, why did you decide to study medicine now? Is it a realistic decision, or just a diversion from a midlife crisis, do you know what the job actually entails, and how can you assure them you will not change your mind again? Secondly, "How do you think you will cope being so much older than everybody else", which I found rather patronising, but it is wise to have thought of a suitable response. Thirdly, and most importantly, how will you finance yourself? No medical school wants to give a place to someone who will subsequently drop out due to financial pressure.

PCEM2

MEDICAL ENGLISH

UNIT FOUR LISTENING: UNDERSTANDING DISCOURSE

UNDERSTANDING DISCOURSE

You're now going to hear a conversation between two students about the course of their medical school.

A - TRY TO ANSWER THE QUESTIONS AS THEY SPEAK:

How many students are there in the 2nd year?

How many students are there in the medical school?

The preclinical course timetabe is full up with

What do the preclinical exams involve?

Where do the students of the clinical course spend most of their time?

What for?

What do the students of the clinical course have to do?

What happens when they pass their final exam?

B - COMPLETE THE FOLLOWING SENTENCES FROM THE CONVERSATION IN WHICH THE FEMALE STUDENT USES 3 DIFFERENT WAYS TO EXPRESS HER INCOMPLETENESS OF UNDERSTANDING:

what the course involves.

what that consists of.

what happens next.

C - TICK THE BEST ALTERNATIVE:

1. I'll try give you a ***rough*** idea. ☐ general / ☐ harsh / ☐ crude

2. ☐ The pre-clinical course, which precedes the clinical course, lasts 3 years.
   ☐ The clinical course, which follows pre-clinical course, lasts 2years.
   ☐ The course, which is split into two parts, lasts 5years.

3. You don't ***actually*** spend much time with patients until the clinical course.
   ☐ for the moment / ☐ approximately / ☐ in fact

4

Subjects	Preclinical Course	ClinicalCourse
Paediatrics		
Medicine		
Anatomy		
Physiology		
Surgery		
Biochemistry		
Obstetrics and Gynaecology		
Pathology		
Biophysics		
Statistics		
Psychology		
Sociology		
Pharmacology		

GRAMMATICAL TRANSLATION:

1. You spend nearly all your time in the medical school.

2. «You'll also have oral exams where you answer questions face to face with the examiner.»»I'm not looking forward to that. Still, it's a long way off.»

3. It sounds an awful lot.

TRANSLATION OF MEDICAL TERMINOLOGY

Give the English Equivalent:

Cours magistral

TP

TD

Concours

Stage

Stagiaire

Internat de médecine

Résidanat

Service:

WRITING:

Compare the usual British course as outlined by the second student with the medical course in your school.

SPEAKING ACTIVITY

GENETIC COUNSELLING

1- - Definition
- Time
- Components

2- - Prevention of genetic disorders
- Risk factors
- Popular education / educational tools
- Limits of popular education programs

3- - Population screening
- Neonatal screening
- Carrier screening
- Screening mothers

4- - Is genetic counselling easy in your area?
- G.C. and culture
- Do we have the infrastructure?
- Who provides G.C.?

5- - How can G.C. be promoted

6- - Ethics

MEDICAL TERMINOLOGY:

Add the appropriate number of the word from the table to the adjective "genetic," then give the French equivalent of the English expression:

drift(1)	**map(2)**	**marker(3)**	**manipulation/modification(4)**	**probe(5)**
sequencing(6)	**screening(7)**	**fingerprinting(8)**	**load(9)**	**code(10)**

1. Genetic_____: the order of nucleotide sequences in DNA or RNA that form the basis of heredity through their role in protein synthesis.

2. Genetic_____: the random changes that occur in the gene frequency of small isolated populations, resulting in the loss or preservation of genes over the generations.

3. Genetic_____: the analysis and use of DNA patterns from body tissues such as blood, saliva, or semen in order to establish somebody's identity; also called DNA fingerprinting or genetic profiling.

4. Genetic_____: the average number of unfavorable recessive gene mutations per individual in a population.

5. Genetic_____: the alteration and recombination of genetic material by technological means, resulting in transgenic organisms.

6. Genetic_____: a graphic representation of the arrangement of genes on a chromosome.

7. Genetic_____: a known, usually dominant, gene that is used to identify genes, chromosomes, and traits known to be associated with that gene.

8. Genetic_____: a fragment of DNA or RNA marked by a chemical or radioactive substance that will bind to a given gene, used as a tag in order to identify or isolate that gene; also called gene probe.

9. Genetic_____: the analysis of DNA samples of a group of people, carried out in order to find out whether they carry the genes associated with specific inherited diseases or disorders.

10. Genetic_____: the process of determining the individual arrangement of nucleotides that compose a specific gene; also called gene sequencing.

LANGUAGE STUDY: PASSIVE VOICE

1) FORMING THE PASSIVE: BE + PAST PARTICIPLE

Active: (a) Mary helped the boy.

Passive: (b) The boy was helped by Mary.

* In the passive, the object of an active verb becomes the subject of the passive verb: "the boy" in (a) becomes the subject of the passive verb in (b).
* (a) and (b) have the same meaning

Active: (c) An accident happened.

Passive: (d) (None)

Only transitive verbs (i.e. verbs that are followed by an object) are used in the passive. It is not possible to use verbs such as "happen," "sleep," "come," and "seem" (intransitive verbs) in the passive.

* The progressive forms of the present perfect, past perfect, future, and future perfect are very rarely used in the passive.

2) THE PASSIVE FORM OF MODALS AND SIMILAR EXPRESSIONS:

- Tom **will** be invited to the picnic.
- Blood **can't** be drawn.
- Children **should** be taught to respect their elders.
- **May** I be excused from class?
- This book **had better** be returned to the library before Friday.
- This letter **ought to** be sent before June 1st.
- Mary **had to** be told about our change in plans.
- Fred **is supposed to** be told about the meeting.

**** The past passive form: modal + have been + past participle***

- The letter **should** have been sent last week.
- This house **must** have been built over 200 years ago.
- Jack **ought to** have been invited to the party.

EXERCISE 1:

The passive voice of the verb can be used to describe a **state** rather than an **action**.

EXAMPLE:

The popliteal muscle is attached to the femur and tibia.

If the verb is made active, it is often difficult to imagine what the subject of the sentence would be, as in this example:

X attached the popliteal muscle to the femur and tibia.

*This is because we are concerned with the **state** of attachment of the muscle, and not with the **action** of attaching it.*

Stative passives *occur commonly in medical writing. They are always in the present tense. If u prefer, you can think of them as the verb to be + a past participle used adjectivally.*

Complete each of the following sentences by the *stative passive* of the verbs in brackets at the end of the sentence:

1) The ribs_____in pairs. (to arrange)

2) Molars_____for grinding food. (to adapt)

3) The cavity of the tooth_____with pulp. (to fill)

4) Cellular elements_____in the blood. (to isolate)

5) The patella_____in the tendon of the femur.(to embed)

6) The epidermis_____over the papillae. (to mould)

7) Nerve fibers_____with a layer of myelin. (to insulate)

8) The sympathetic nerves_____throughout the body. (to distribute)

9) The pectoralis minor_____into the coracoid process of the scapula. (to insert)

10) Osteoblasts_____from undifferentiated connective tissue cells. (to derive)

EXERCISE 2:Passive with an agent expressed or unexpressed:

Change the verbs in the following sentences from active in to passive:

EXAMPLES:

a) The nuclear membrane encloses DNA in the nucleus.

DNA is enclosed in the nucleus by the nuclear membrane.

b) We divide lamellae into two types.

Lamellae are divided into two types.

NOTE:

(i) Both the examples above are **stative passives**.

(ii) Omission of the agent in example (b) serves to make the statement **impersonal**. Impersonality is a key feature of medical writing.

1) Age, sex and function influence the rate of bone growth.

_____

2) We call the eye socket the orbit.

_____

3) When we add iodine solution to glycogen, we produce a port-wine colour.

_____

4) Mucous membrane lines the intestinal tract.

_____

5) The kidneys remove bilirubin from the blood.

_____

6) Physiologists studied the process of mitosis at the end of the ninetieth century.

_____

7) A delicate plexus of nerve fibers accompanies blood vessels.

8) Chemists extract quinine from cinchona.

9) We find sucrose in the sap of many plants.

10) We do not understand the function of the thymus.

11) The quadriceps muscle supports the front of the knee.

12) Lack of oxygen can interrupt conduction in the nerves.

13) Two groups of veins return blood to the heart from the legs.

14) We classify various types of epithelium, mainly according to cell shape.

15) The presence of infection accelerates the flow of lymph.

16) We are feeding him by a tube that enters his nose.

EXERCISE 3: Nouns formed from verbs

In the following sentences, change the verbs in italics to their related nouns. Make the other necessary changes in the sentences. Sometimes additional material is provided in brackets at the end of the sentence to help you.

EXAMPLES:

(i) When we study cell structure, we are limited by the techniques available.

The study of cell structure is limited by the techniques available.

(ii) We could not investigate the ribosomes until the EM was developed. (had to wait)

The investigation of the ribosomes had to wait the development of the EM.

1) An apochromatic lens is used to *eliminate* colour aberrations.

2) As methods of light microscopy improved, we understood more about cell structure. *(increased)*

3) Even weak visible fluorescence is adequate if we are *examining* microscopically.

4) Small amounts of fluorescent dye can be added to living cells without damaging them. *(cause)*

5) In order to *demonstrate* reticulin fibres properly, metallic impregnation methods are necessary.

6) DNA is reproduced during cellular division. *(occurs)*

7) The fluorescent acridine orange technique *was discovered* accidentally.

8) Formalin pigment is produced as a result of tissue fixation. *(caused)*

9) An optical microscope has the power of *magnifying* up to 10 thousand times.

10) You may require a very fine needle to *remove* a specimen.

11) A centrifuge is *used* to compact the red blood cells in a blood sample in order to *determine* the percentage of the blood that consists of cells.

GRAMMATICAL TRANSLATION: FOCUS ON "PASSIVE VOICE"

Translate into French:

1/ Our conversation is being recorded while we're speaking.

2/ English is spoken here.

3/ She's called Alice.

4/ You'll be called.

5/ We were allowed to go.

6/ The case study was written by Dr. M'rad.

Translate into English:

7/ On sait aujourdhui que...

8/ Il se fait opérer demain.

9/ On s'occupe bien de nous dans ce dispensaire.

10/ Pendant l'essai clinique, on a donné aux patients un placebo.

11/ On leur a joué de la musique douce pour des fins thérapeutiques.

12/...puis on a demandé au patient de se lever.

19

OPPORTUNITY AND REALITY

The attitude of some medical students to those older than themselves can occasionally be somewhat disconcerting. A first-year student was recently heard to comment to a mature student in her year, "Isn't it funny, you are in our year, but when we come back for reunions, you will probably be dead".

A variety of roles may be created by your new peer group for you to fit in to. These can range from being initially seen as the "old freak" or "year swot" to pseudo parent or agony aunt. These roles do tend to diminish over time, and most mature students are viewed as an asset as they bring in a different range of knowledge and experience. The importance of maintaining old friendships and having an outlet away from medicine, however, cannot be overemphasised.

"Will I be able to cope with the work?" can obviously be a further worry. A levels may seem a dim and distant memory, and the type of work or learning most mature students have been previously doing is a far cry from the vast amounts of memorising required by the medical course. There is no doubt about it – studying medicine is a lot of work, with regular examinations and a full timetable. Most mature students do seem to have developed a better notion of time management and efficient learning, however, and this, coupled with a strong motivation to complete the course, can alleviate some of the work pressure.

Being a clinical student learning on the wards brings its own particular problems. The transition from having a respected job or being an instrumental part of a team to having no exact role perhaps presents more difficulties to a mature student than to others. The unpleasant "teaching by humiliation" method employed by some doctors may be particularly trying to mature students, especially when (as has been known to happen) the person being so patronising was in your little sister's year at school. Being at the very bottom of such an entrenched hierarchy can be wearing and frustrating. Overall, however, most doctors involved in teaching are extremely supportive of mature students, and a proportion feel all medical students should gain outside experience before embarking on a medical career.

Progressing through the training the clinical aspects of the course become more important and, for the majority of students, more enjoyable. Mature students tend to find this especially true and are often in a position of strength, being more confident and relaxed in their interactions with patients, bringing skills and experience from previous careers.

Personally I have found this is one of the greatest assets of being a mature student, finding emotional or difficult situations easier to cope with than if I had come straight into medicine from school.

The downside can be that fellow students and doctors can have a higher expectation of your abilities and knowledge. While this may be true in some aspects of communication, the learning curve for practical skills is just the same as for others. Being a few years older does not necessarily mean you are an instant pro at inserting a catheter.

Once you have realistically decided that medicine is the career for you, possibly sat required A levels, got through the interview, and faced up to the prospect of at least 5 years' financial hardship, is it all worth it?

Being a mature student it is all the more important to make sure that the decision to study medicine is not viewed idealistically. There are some doctors who deeply regret the decision to go into the profession. One doctor, who was a mature student, replied when asked, "It was the worst decision I ever made. I'm permanently tired and just don't have the time I would like for myself or family anymore".

Older students obviously often have different commitments and priorities which their younger colleagues are yet to experience, such as children or a mortgage. While life through medical school can be hard, with academic stress and financial worry, difficulties do not end with qualification. Becoming a doctor not only brings new opportunities but also a different way of life. The line between work and personal life can become increasingly blurred. Despite a more enlightened approach to junior doctors' hours, the time commitment is still immense. The work ethic is unlike that of any other career. This means that inevitable sacrifices have to be made in one's personal life, and consideration as to how this will affect present or future partners and children is important.

Having stated many of the difficulties, the advantages of being a mature student are considerable. Medicine, perhaps more than any other profession, requires a maturity of insight, both personally and in dealing with patients; many situations are emotionally demanding and stressful; coping with added academic pressure can be tiring and demoralising. A more mature approach together with a greater certainty in your career choice is a definite asset.

PCEM2

MEDICAL ENGLISH

UNIT FIVE
READING:
THE UNCOMMON FLU

THE UNCOMMON FLU Readying vaccines in the face of a possible H1N1 pandemic

Taking no chances: Threat of pandemic has boosted interest in new vaccines

PITY THE SCIENTISTS AND vaccines companies deciding how best to respond to the swine flu pandemic first identified this spring in Mexico. Whatever choices they make, there are serious consequences and little certainty.

Long neglected as a niche activity, vaccines have become big business in recent years, as pharmaceutical companies seek new markets, inspired partly by growing US funding to defend against bio-terrorism, and international support to prepare for a flu pandemic since the lethal H5N1 avian virus began infecting humans in 2003.

But if the world is better prepared for a pandemic, with plans in place and antivirals to help treat outbreaks, there is no room for complacency – and vaccines are part of the problem.

On paper, they provide the best possible protection against infection. In practice, the constant mutation of the virus and vastly insufficient production capacity restrict their potential.

Public health specialists regularly call for greater take-up of the seasonal flu vaccine. Yet despite its ability to reduce the impact of about 500,000 flu deaths a year globally and many more hospitalisations, sales remain relatively modest. Without the prospect of far greater bulk purchases, investment both in new manufacturing plants and more productive techniques has been scant.

Fresh money – and the outbreak of the H1N1 pandemic – has redoubled investment in new approaches. Currently, most vaccine antigens are cultivated in eggs, in a low-yielding process that takes up to six months.

Newer ideas include adding adjuvants designed to stimulate a greater immune response and reduce the amount of antigen required per dose; injections just under the skin, which appear to have a similar effect; and cell-based production techniques that can produce greater yields more quickly.

Meanwhile, a handful of biotech companies are working on radically different approaches, hoping that the pandemic threat will encourage governments and regulators to give them more support.

> *'This is a huge wake-up call to the authorities. It is helping us make a very strong case for innovation'*

"This is a huge wake-up call to the authorities," says Rahul Singhvi, chief executive of Novavax. "It is helping us make a very strong case for innovation in this area and I believe it will increase funding and interest in new technologies. For how long will the authorities continue to rely on the old vaccine technology?"

Novavax, based in Rockville, Maryland, is developing a vaccine based on "virus-like particles" that contain three key proteins of the flu virus without the genes required for replication. The starting point for these VLPs is the genetic sequence of the viral strain, which the US Centers for Disease Control and Prevention and similar labs can obtain within a week of a flu outbreak starting, using the latest gene sequencing technology.

Dr Singhvi says a "seed" stock of the virus itself, required to make conventional vaccines, is not needed for VLP vaccines. The latter could be in production 10 to 12 weeks after a new viral strain has been identified – an egg-based vaccine takes twice as long.

This H1N1 pandemic may come too soon for companies such as Novavax. Although it has set in train the production of a vaccine for the new H1N1 flu, Dr Singhvi is not sure how much testing the Food and Drug Administration would require in a pandemic emergency.

Lipoxen, based in London, has developed technology to make flu vaccines go much further by encapsulating the antigens, the viral proteins that provoke an immune response, in microscopic particles called liposomes. This makes the vaccine 10 times more effective, says Peter Laing, the company's chief operating officer. Another advantage is that liposome vaccines do not need refrigeration – a great advantage if they need to be distributed rapidly in developing countries.

The pandemic has given new urgency to Lipoxen's discussions with the big vaccine manufacturers to license its technology. But Dr Laing says the vaccine industry and regulators are still haunted by memories of the 1976 swine flu debacle, when the US government ordered mass immunisation of the population in the face of a possible pandemic.

The 1976 pandemic never came but a significant number of people suffered serious neurological side effects from the vaccine that was rushed into production, including 25 reported deaths from Guillain-Barré syndrome.

In the short term, government purchasers and vaccine manufacturers will have to make do with more modest tweaks to their approaches. They must decide whether switching an existing seasonal flu strain vaccine for one protective against Mexican H1N1 offers the prospect of saving lives. And how most fairly to allocate scarce existing supplies.

CC, AJ

THE UNCOMMON FLU

I GLOSSARY:

H5N1: (§2)

Scientists identify the various strains of avian flu and other varieties of Type A influenza by categorizing them according to the differences in two key proteins found on the surface of the virus. The two proteins are hemagglutinin (H) and neuraminidase (N). There are 15 major subtypes of H and 9 major subtypes of N. The virus that caused the 1997 Hong Kong outbreak was designated H5N1 because the key proteins on the surface of the virus were subtype H5 and subtype N1. Tests determined that strains related to H5N1 were behind the deadly Asian outbreak that began in 2003. Some poultry farms in Europe and the eastern United States, meanwhile, suffered outbreaks in 2003 and 2004 of subtypes of H7, an avian strain that is currently believed to be less dangerous to humans.

Guillain-Barré Syndrome: (§15)

Guillain-Barré Syndrome, relatively rare disease of unknown cause affecting the peripheral nervous system, especially the ventral roots of the spinal cord, and characterized by a flaccid paralysis. This condition can strike at any age, and both sexes are equally prone to the disorder. In the United States, this rare syndrome affects about one person in 100,000. Onset of the disease frequently follows a mild respiratory or gastrointestinal infection by one to three weeks, indicating that an autoimmune response of some kind may be involved.

Early symptoms include fever, malaise, nausea, and muscular weakness. The paralysis that follows is usually accompanied by sensations of tingling and numbness. The disease may reach an acute phase during which mechanical ventilation is required to avoid respiratory failure.

No specific treatment is known. Improvement begins spontaneously; recovery usually takes place within a few weeks or months. With proper care, mortality is less than 5 percent, and the prognosis for complete recovery is good.

II READING COMPREHENSION:

A - ANSWER THE FOLLOWING QUESTIONS:

1- Why have vaccines become big business in recent years?

2- List the factors which restrict the capability of pharmaceutical companies to execute the protection against infection.

-

-

3- Use your own words to sum up the new ideas concerning vaccine antigens.

4-Explain in your own words the short term solutions suggested by the author.

B - TRUE OR FALSE? JUSTIFY OR CORRECT:

1-Every year, the public health specialists could save almost 500 thousand lives. ☐ True ☐ False

2-Like conventional vaccines, VLP vaccines require a "seed" stock of the virus itself. ☐ True ☐ False

3-The production of an egg-based vaccine takes 20 to 24 weeks. ☐ True ☐ False

4-In case of emergency, the FDA is not expected to require any testing for H1N1 flu vaccine. ☐ True ☐ False

C - FILL IN THE TABLES:

a-

Virus	Reference	Year

b-

Biotech Company	Based in	Techniques	Advantages

E - WHAT DO THESE REFER TO?

this (§1): _____

they (§1): _____

VLPs (§10): _____

25 (§15): _____

III VOCABULARY:

A - FIND THE WORDS THAT MEAN:

- a disease or condition that is found in a large part of a population (§1): _____
- specialized market (§2): _____
- terrorist acts involving the use of biological or chemical weapons (§2): _____
- sudden occurrence of an epidemic (§3): _____
- use (§5): _____
- substances injected along with an antigen to enhance the immune response stimulated by the antigen (§7): _____
- the use of biological processes in industrial production (§8): _____
- a sudden humiliating failure (§14): _____
- slight adjustments (§16): _____
- changing (§16): _____

B - FIND THE OPPOSITE OF:

- fewer (§5) ≠ _____
- sufficient (§5) ≠ _____
- refuse (§16) ≠ _____

C - EXPLAIN:

- There is no room for complacency (§3): _____
- mass immunization of the population (§14): _____

D - FIND IN THE TEXT THE ENGLISH EQUIVALENT OF:

financement (§2): _____

perspective (§5): _____

achats en grande quantité (§5): _____

actuellement (§6): _____

contrôleurs (§8): _____

souche (§10): _____

ces derniers (§11): _____

IV . LANGUAGE STUDY: COMPOUND ADJECTIVES

A - STUDY THE FOLLOWING EXAMPLES:

1- noun + adj. = air-sick

2- noun + present participle = blood-sucking

3- noun + past participle = breast-fed

4- noun + noun-ed = doe-eyed

5- adj. + adj. = sour-sweet

6- adj. + present participle = slim-making; fine-looking

7- adj. + past participle = British-built; free-born

8- adj. + noun-ed = absent-minded; fair-haired

9- adv. + adj. = half-dead; all-powerful

10- adv. + present participle = quick-growing

11- adv. + past participle = close-shaven

12- adv. + noun-ed = down-hearted; outsized

13- number + noun + adj. = a 70-year-old man

B - LOOK AT THESE EXAMPLES FROM THE TEXT. GIVE THEIR FORM (I), EXPLAIN THEM (II) THEN TRANSLATE THEM INTO FRENCH (III):

• a low-yielding process (§6):(i)

(ii)

(iii)

• cell-based production techniques (§7):(i)

(ii)

(iii)

• virus-like particles (§10):(i)

(ii)

(iii)

• an egg-based vaccine (§11):(i)

(ii)

(iii)

C - MAKE COMPOUND ADJECTIVES:

(i) A hospital that is better equipped → _____

(ii) enzymes for oxidation reduction → _____

(iii) process of hunting diseases → _____

(iv) terms related to flu→ _____

(v) forms of cells that are bound to tissue→ _____

(vi) bacteria with a single cell→ _____

(vii) breast lump in the left side→ _____

(viii) a wait of two weeks → _____

GRAMMATICAL TRANSLATION: FOCUS ON "COMPOUND ADJECTIVES"

Translate into French:

(i) a blue-eyed midwife:

(ii) a short-haired wardsmaid:

(iii) a long-legged teenager:

(iv) a broad-shouldered male nurse:

(v) a narrow-minded brain surgeon:

(vi) a left-handed medical secretary:

Translate into English:

(i) une opération de deux heures:

(ii) un scanner de 70 millions de dollars:

(iii) un kyste de 5 cm de diamètre:

(iv) un fauteuil roulant électrique d'occasion:

V. WRITING:

INFECTIOUS DISEASE	CAUSE	ANNUAL DEATHS
Acute Respiratory Infections (mostly Pneumonia)	bacterial or viral	4,300,000
Tuberculosis	Bacterial	3,000,000
Hepatitis B	Viral	1,000,000 to 2,000,000
Malaria	Protozoan	1,000,000
AIDS	Viral	550,000

use the table and the hints below to write a paragraph in which you compare the world's deadliest scourges

hints:

linkers: on the one hand/on the other hand – while – whereas

verbs: take the lives of – kill

comparatives: twice/half – as...as – as many as/ as much as – less/more – most/least

relative clauses: whose cause is – which is caused by – which is either... or...

21

OPPORTUNITY AND REALITY

Maintaining friendships outside medicine means that when it all gets a bit too much you can escape, and being offered a second chance at being a student can mean you make far more of the opportunities offered to you than when you first left school. Overall I have found medicine to be fascinating and enjoyable.

The career choices available once you are in the profession are extremely varied so finding your niche should be possible. The combination of human contact with academic interest is unlike that of any other career, and the unique privilege of being so intimately involved in people's lives never fails to be exciting or interesting. It is possible and personally I feel it is worth it ... (but ask me again when I'm a junior doctor).

SE

Equal opportunities, equal difficulties?

Opportunity to enter medicine has, as far as can be judged, become equal for those realistic about their qualifications. But everyone considering becoming a doctor must look behind and beyond medical school to the reality of whether a career in medicine is for them a pathway to fulfilment or to frustration. The tension between the relative freedom of many careers and the

ties of medicine face men and women alike. But medicine is a tougher career for many women than for most men. A few years ago we received a letter from three students from St George's Hospital Medical School in London, indignant about the suggestion that the position of women requires special consideration: "For a start, let's bury the idea that male and female students have different aspirations – we all wish to end up well rounded human beings ..." Sure, but it is not necessary to become a doctor to do that, although medical education will have failed in part of its purpose if all doctors are not "well-rounded" individuals.

The difficulties particularly facing women doctors are both subtle and unsubtle. The obvious are the dual responsibilities of family and career, which most women do not wish to know about, consider, or even recognise when they are medical students but which they begin to come to terms with once the all consuming task of qualifying as a doctor has been achieved. Opportunities for part-time training and employment in many specialities are limited. Career dice are loaded against those who patiently plod through long years of part-time training. Progress towards a training and a career structure which would fully harness skills of (in future) at least half the medical workforce is slow. The personal and national cost of failure to use the skills of women doctors fully would be immense.

The potential disadvantages for women in postgraduate training can be and often are overcome supremely well with good family support. Recent changes in taxation allowances also mean better financial support for working families through tax relief on childcare. Some specialities – such as general practice, pathology, radiology, anaesthetics, and public health – can readily be made flexible and compatible with other responsibilities.

The more subtle difficulties facing women include the feeling that more is demanded of them as doctors because they are women. Not all women agree but a woman doctor, Fran Reichenberg, wrote that:

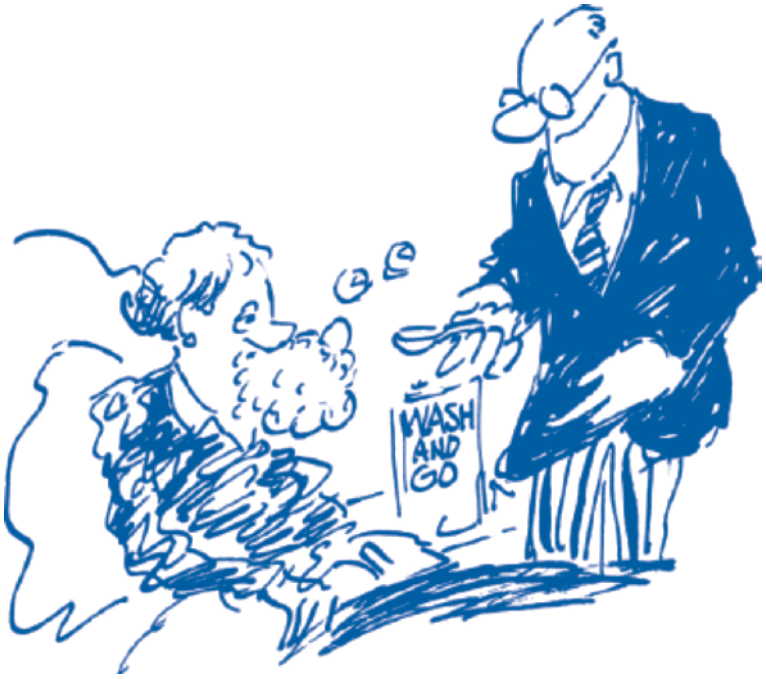
Both patients and staff expect far more of female doctors. These expectations arise from traditional female roles in society of mother, carer, so other of the distressed ...

She also believed that male doctors may get special treatment from the team:

The perks of the male house officer who shows a clear interest in the female staff include his intravenous fluids being drawn up and done, his results filed for him, his blood forms filled out. Many telephone calls chasing results being done for him. ... These differences amount to many extra hours' work a week for the female house officer and exacerbate her fatigue and low morale.

In our experience, special treatment can work both ways.

Women compete very effectively but sometimes against the odds. The unsaid concern about the organisational and financial impact of maternity leave seems to confer no overall disadvantage. Women may, however, suffer disproportionately from the innate conservatism of consultant appointments committees. Most members of appointments committees and most remaining consultants in post are for historical reasons men. Having more women on appointments committees is not necessarily the answer: on one occasion the strongest opposition to taking gender into account in appointing to an obstetric team serving an ethnic population with substantial preferences for women doctors came from the only woman on the committee.



22

OPPORTUNITY AND REALITY

Many women still feel at a disadvantage, as Dr Anne Nicol, a consultant pathologist, explained:

> Unless we remove the glass ceiling, many top candidates for consultant posts will fail to reach the top. Let's face it, jobs go to the applicant wanted by the consultants in post ... [who] still see the ideal colleague as someone much like themselves ... you can almost hear them say "one has to be able to get on with him – he has to be on your wave length"... tribalism among male consultants is strong, pressure to be one of the herd intense; Tory voting, middle class, privately educated, golf playing white males are the tribal group most likely to succeed ...
>
> The common perception is that women don't fit in, are difficult to work with and can never be one of the tribe. A woman making a vocal stance on a topic will find it is not long before someone comments on her hormonal balance or time of month ...
>
> We can ensure that more women at least get their noses pressed against the glass ceiling by creating more family-friendly training packages, part-time posts and job shares.

Each aspiring entrant to medicine must come to terms with the length and the nature of the training, the demands of the career, and the reality of his or her own personality and ability. Add to this a strategic view of the opportunity – open and equal on merit at the beginning, convoluted later for several reasons, but destined to become more equal. Finally, the professional responsibility of putting patients first is inescapable, often uncomfortable, but fulfilling.

Requirements for entry

> Entry to medical school is academically the most competitive moment in the student's life. However, becoming a doctor requires many more qualities than brain power, including compassion, endurance, determination, communication skills, enthusiasm, intellectual curiosity, balance, adaptability, integrity, and a sense of humour. All these are highly desirable attributes but not absolute "requirements" for entry to medicine: few have them all but a remarkable number of applicants have many.

Academic ability is an essential requirement for entry, and the ability to pass examinations remains important throughout the course and the subsequent years of postgraduate training. Less competitive than A levels, but no less intense, were the traditional end of first and second year examinations on the sciences underpinning medicine. New curricula that emphasise understanding and integration of knowledge rather than "facts" are tested more by continuous assessment, a less destructive process than a series of annual crises but not without a constantly recurring academic tension. Professionally, the hardest examinations are those for the higher specialist diplomas of fellowship or membership of the Medical Royal Colleges, requiring a broad and solid grasp of the clinical skills, knowledge, and, to an increasing extent, the attitudes appropriate to a specialist. "Finals" – the examinations for the Bachelor of Medicine and Surgery degree, the degree which acts as the basis for a provisional licence to practise as a doctor, are largely a matter of hard slog, particularly in the later years. They used to be taken as a big bang at the end of the course but are now broken up at most universities over a period of about 18 months.

Broader requirements

Although all doctors need to be bright (not less perhaps than what it takes to get three B grades at A level at first attempt), medicine needs a great deal more than academic ability. Applicants must not forget that chances of success in the admissions process rest as much on additional skills – ability to communicate, empathy and integrity – as they do on academic prowess. Any admissions tutor will be looking to assess your awareness of the qualities that any good doctor requires. Dr Phillip Hay of St George's summarises these attributes as:

- knowledge and understanding
- proficiency in basic clinical skills
- attitudes necessary for good medical practice and patient care
- intellectual curiosity and critical skills
- good teamwork
- lifelong learning
- robustness
- thoroughness
- awareness ofown limitations
- open-mindedness
- reflectiveness
- cultural awareness
- sensitivity to life-cycle changes.

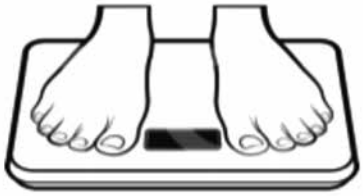
PCEM2

MEDICAL ENGLISH

UNIT SIX
EXPRESSING MEASUREMENT

SECTION 1 : EXERCISES

1. MAKE SENTENCES FROM THE TABLE BELOW AS IN THESE EXAMPLES:



Body weight is measured in kilograms (kg).

Body temperature is measured in degrees Centigrade (°C)

Blood pressure		litres (l)
The quantity of blood in the body	is	litres per minute (l/min)
Blood haemoglobin content	measured	millimetres of mercury (mm/Hg)
Red blood cell content	in	grams per hundred millilitres (g/100 ml)
Blood flow		millions per cubic millimetre (.../cu.mm)

1 _____

_____

2 _____

_____

3 _____

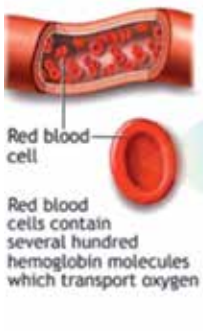
_____

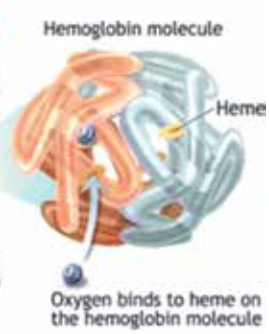
4 _____

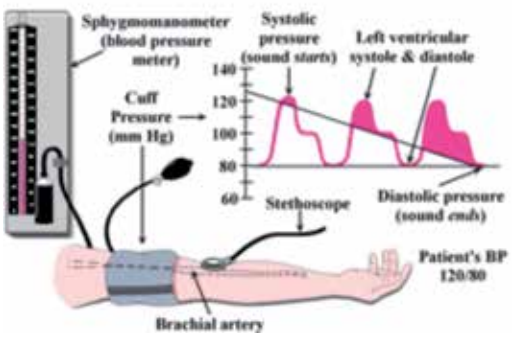
_____

5 _____

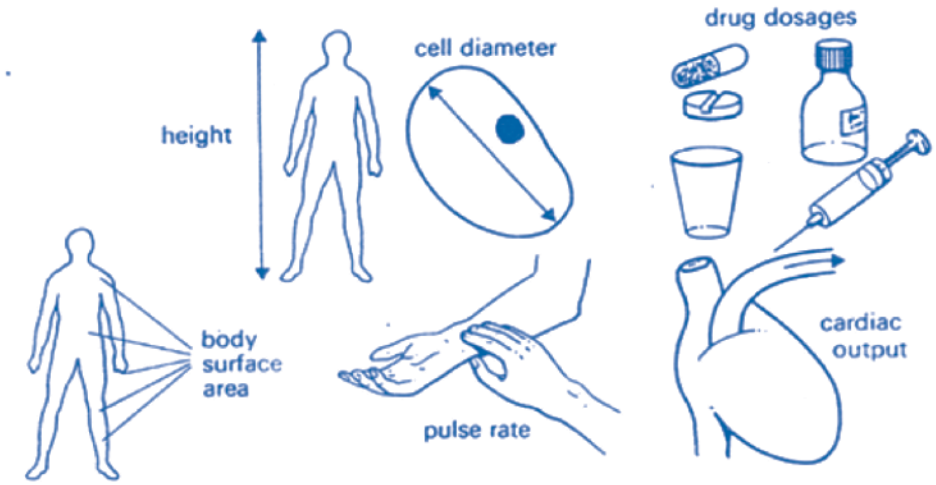
_____







2. MAKE SENTENCES USING THE INFORMATION BELOW:



(m) meter	(m^2) metre squared	(l/min) litres per minute
(cm) centimetre	(sq.m) square metre	(l) litre
(µm) micron (micrometre)	(gr) gram	(ml) millilitre
(cc) cubic centimetre	(mg)milligram	(b.p.m.) beats per minute

1 _____

2. _____

3. _____

4. _____

5. _____

6. _____

3.MAKE SENTENCES USING THE INFORMATION BELOW AS IN THESE EXAMPLES:

(adult pulse c. 70 b.p.m.)

→ The normal pulse rate for a resting adult is about 70 b.p.m.

(oral temperature 36°-37.2° C) (97°F)

→ Normal temperature in the mouth ranges from/between 36° to/and 37.2°C.

a) child's pulse c. 90

_____

_____

b) infant's pulse c. 120

_____

_____

c) blood pressure (in a young man) 120/80 mm/Hg

d) systolic blood pressure 100-140 mm/Hg

e) diastolic blood pressure 65-85 mm/Hg

f) rectal temperature 36.3°-37.6°C

g) axillary temperature 35.5°-36.7°C

4. COMMENT ON THE RECORDINGS BELOW AS IN THE EXAMPLES:

Look and read:

If a patient's temperature is 38°C, it is above normal.

If a patient's temperature is 40°C, he has a high temperature.

If a patient has a blood pressure of 160/100 mm/Hg, he has a high b.p.

If a resting adult's pulse is 100 b.p.m., it is fast.

a) 36.3°C | b) 104°F | c) 34.5°C

d) 50 b.p.m. (adults) | e) 125 b.p.m. (infant) | f) 115/75 mm/Hg

g) 200/120 mm/Hg | h) 140/90 mm/Hg | i) 85/50 mm/Hg

a _____

b _____

c _____

d _____

e _____

f _____

_____

g _____

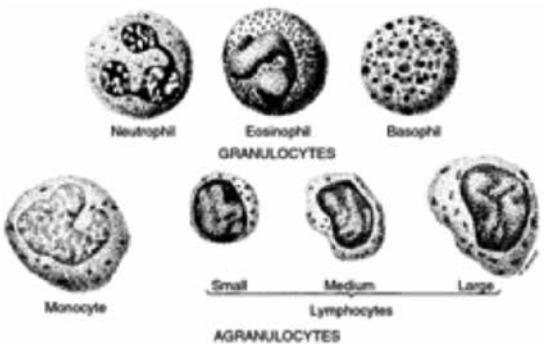
_____

h _____

_____

i _____

5. USE THE TABLE AND THE EXAMPLES TO ANSWER THE QUESTIONS BELOW:



	Normal Values		
Total number per cu.mm.	**average**	**minimum**	**maximum**
Leucocytes	7,000	5,000	10,000
Neutrophils	4,300	3,150	6,200
Lymphocytes	2,100	1,500	3,000
Monocytes	375	285	500

The normal leucocyte count for a male ranges from 5,000/cu.mm. to 10,000/cu.mm. with an average of 7,000/cu.mm.

a) Write a sentence about the normal neutrophil count.

_____

_____

_____

b) What is the normal range of values for lymphocytes?

c) What is the average lymphocyte count?

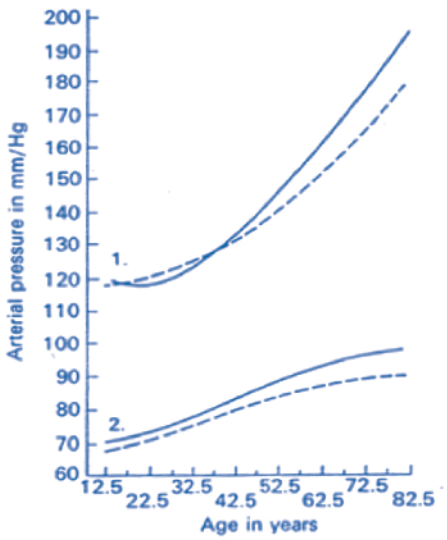
d) What is the normal range of values for monocytes?

e) What is the average monocyte count?

6. LOOK AT THIS GRAPH AND COMPLETE THE DESCRIPTION BELOW IT:

Blood pressure and age:

1. systolic _____ females
2. diastolic _____ males



The graph shows the effect of age on

The vertical axis represents

The horizontal axis represents

The continuous line represents

The dotted line represents

a) The average systolic b.p. for males in the age group 20-24 is _____

b) The average diastolic b.p. for females in the 30-34 age group is _____

Between the ages 25-29 and 35-39, the average systolic b.p. in males increases from about 120 to approximately 126 mm/Hg.

Between the 10-14 and the 20-24 ages groups, the average systolic b.p. in females decreases from about 119 to about 117 mm/Hg.

c) Systolic b.p. in females between the 40-44 age group and the 60-64 age group

_____

d) Between the 40-44and the 60-64 age group, the average diastolic b.p. in females

_____

Read these conclusions which we can draw from the graph:

→ The graph shows that blood pressure increases with ages in both sexes.

→ Systolic b.p. increases { more rapidly / at a faster rate } than diastolic b.p.

→ The increase in systolic b.p. is { more rapid / faster } than the increase in diastolic b.p.

Compare in the same way:

e) diastolic b.p. in males and females

_____

_____

f) systolic b.p. in males and females

_____

_____

g) diastolic b.p. in males and females in the age range 10-29

_____

_____

h) systolic b.p. in males and females in the age range 65-84

_____

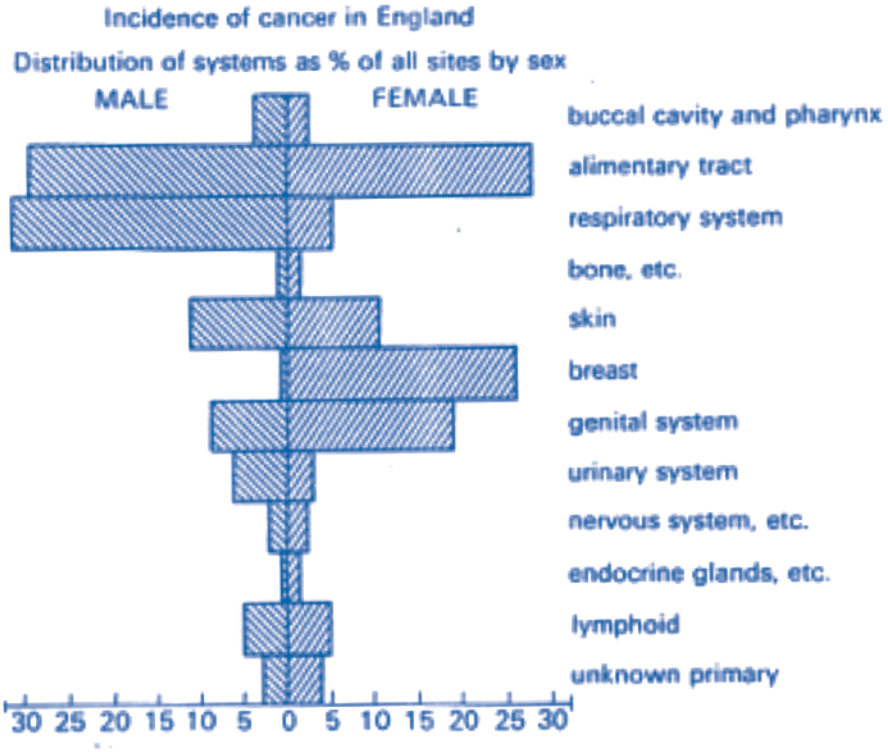
_____

i) systolic and diastolic b.p. in females from 10-34

_____

_____

7. LOOK AND READ:



This histogram, or bar diagram, shows the number of cancers which occurred in different sites in men and women in England as a percentage of the total number of cases.

The horizontal axis represents the percentage of all cases in each sex. The bars along the vertical axis represent the different sites of cancer.

From the diagram we can see that:

Cancers of the alimentary tract	{ amounted to / accounted for }	26.5% of all cancers in females.
26.5% of all cancers in females	{ occurred / were }	in the alimentary tract.

Answer these questions:

a) Which type of cancer accounted for 8.5% of all male cases?

b) Which site was affected in 4.5% of all female cases?

c) Which type of cancer occurred in 28.8% of all males cases?

d) Which two types of cancer accounted for over half the total for each sex?

What can you say about:

e) cancers of the breast in females?

f) cancers of the urinary system in males?

g) cancers of the genital system in females?

h) cancers of the respiratory system in males?

i) skin cancers in both sexes?

As in the example, compare the incidence, in males and females, of:

The incidence of genital cancer was { higher in females than in males. / lower in males than in females.

j) cancers of the buccal cavity and pharynx

k) cancers of the urinary system

l) lymphoid cancers

As in the example, make sentences about the following:

The highest incidence of cancer in males was in the respiratory system.

m) lowest / males

n) highest / females

o) lowest / females

SECTION 2 : READING

8. READ THIS PASSAGE QUICKLY AND CHOSE THE BEST TITLE FOR IT:

☐ **Average Heart Rate**

☐ **Heart Rate in Man**

☐ **Age and Heart Rate**

The average heart rate in man at rest is about 70 beats per minute, although there is a wide variation among individuals who may have normal rates considerably lower or higher than this. Trained athletes may have a normal rate as low as 50 beats per minute at rest. Their stroke volume, however, is large. Age has an effect on heart rate in that the rate in humans decreases progressively from approximately 140 beats per minute on the foetus to 120 in the infant, 90 in the child and 70 in the adult. The heart rate is faster after meals, exercise and emotional excitement.

Choose the correct word or phrase to complete these sentences:

a)_____states the main idea of the passage.

A. The first part of the first sentence

B. The whole of the first sentence

C. The fourth sentence

b) The second sentence contains_____

A. a new idea in the passage

B. an example of a normal rate higher than average

C. an example of a normal rate lower than average

c) The third sentence explains why 50 b.p.m. for a trained athlete is_____

A. low. B. normal. C. high. D. restful.

d) The range of normal for resting pulse is approximately_____

A. 65-75. B. 60-80 C.50-90 D.30-110

e) "Stroke volume" means_____

A. a low pulse rate.

B. The amount of blood pumped out of the heart per beat.

C. The amount of blood pumped out of the heart per minute.

f) The heart rate is faster after meals because_____blood than usual is needed by the stomach and intestines.

A. more B. less C. no more

g) Mr. X has a pulse of 70 b.p.m. and a stroke volume of 75 ml.

Mr. Y has a pulse of 50 b.p.m. and a stroke volume of 105 ml.

Therefore Mr. Y's heart pumps.....

A. more blood per beat and more per minute

B. more blood per beat but less per minute

C. more blood per beat but the same per minute

D. less blood per beat and less per minute

h) Four 25 year-old men go to see their doctor. He is quite happy with A who has a pulse of 65 and B whose pulse is 85, but is worried about C, with 53 and D, with 72. Discuss possible explanations for each case.

A

B

C

D

9. READ THIS PASSAGE TO FIND THE ANSWERS TO THE QUESTIONS:

a) What is "cardiac index"?

b) What is the range of cardiac index?

The term cardiac index is used to refer to the cardiac output per square metre of body surface area. It is frequently convenient to express the output of the heart per beat as stroke volume, or the cardiac index per beat as stroke index. The resting cardiac index in normal man is approximately 3.3 litres per minute per m^2, with a low value of about 2.8 litres per min per m^2. The upper limit of normal is difficult to define because anxiety increases the cardiac output. Cardiac index decreases with age at the rate of approximately 25 ml per min per m^2 per year after early adulthood. Assuming a resting heart rate of 70 b.p.m., the normal stroke index is 47 ml per beat for an adult of average size.

c) Here's a summary of the six sentences of the passage. Put them in the correct order. (Note: one of them refers to two sentences.)

_____A. Normal values for cardiac index

_____B. Normal value for stroke index

_____C. Definition of cardiac index

_____D. Effect of age on the output of the heart

_____E. Ways of measuring the output of the heartper beat

d) Rewrite each part of the second sentence to make a sentence similar to the first sentence.

(i) The term cardiac index is used to refer to the cardiac output per square metre of body surface area. i.e. C.I. = $\frac{C.O.}{m^2}$

(ii) The term stroke volume

(iii) The term

e) Make three sentences from this table:

Cardiac index Stroke volume Stroke index	is calculated by dividing	the cardiac output the cardiac index	by	body surface area in m^2 pulse rate

f) Taking 1.7 m^2 as the normal body surface area, calculate the normal value for cardiac output in a resting man.

g) Using the information from (f) and taking 70 b.p.m. as normal, calculate the stroke volume for a normal adult.

h) Assuming a resting heart rate of 66 b.p.m., calculate the normal stroke index for an average size adult.

SECTION 3 : TRANSLATION

Translate into French:

To determine overall heart function, doctors measure cardiac output, the amount of blood pumped by each ventricle in one minute. Cardiac output is equal to the heart rate multiplied by the stroke volume, the amount of blood pumped by a ventricle with each beat.

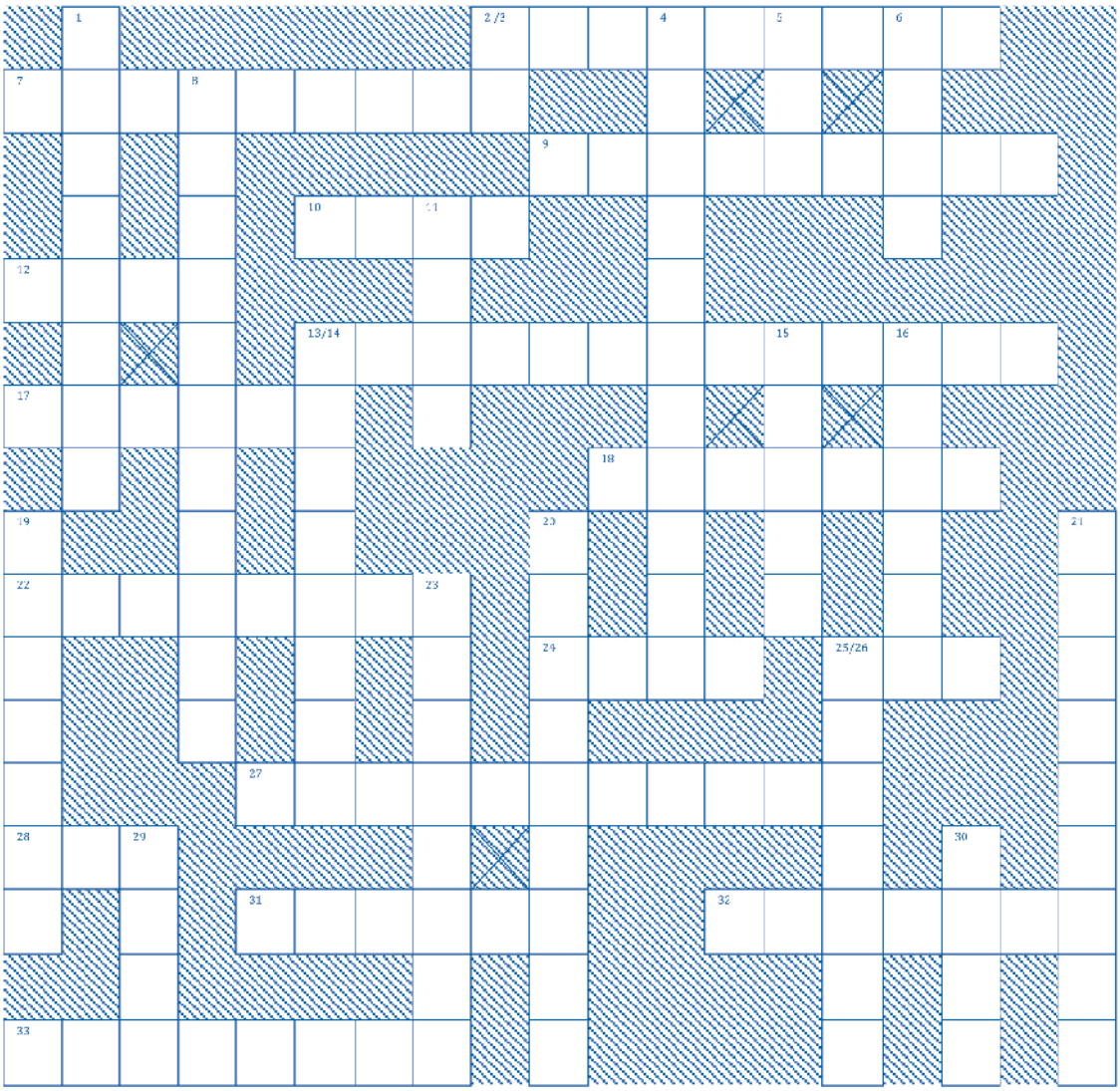
MEDICAL CROSSWORDS PUZZLE *Created by: Pr. Rafla BAHROUN*

ACROSS

3. of expansion of heart on eat beat (adj.)
7. tendency for eyes to turn outward
9. surgical intervention
10. prefix meaning tumor
12. part of pelvis (pl.)
14. of brain and spinal cord (adj.)
17. a blood vessel that is part of the system carrying blood under pressure from the heart to the rest of the body
18. surgical knife
22. of fluid-carrying vessels
24. sperm or semen as a vehicle of reproduction
26. scanning electron microscope (abbr.)
27. immune system cells
28. flesh around teeth
31. human offspring in initial developmental stage until eighth week
32. science of life
33. genetic units that can multiply independently in host cells or when integrated with a chromosome

DOWN

1. of armpit (adj.)
2. delayed action of arms (abbr.)
4. medical instrument used for listening to breathing, heartbeats, etc.
5. suffix meaning tumor
6. colored part of the eye
8. of emergency medical worker (adj.)
11. treat illness successfully
13. study / examination of cells
15. regular / singular beat of blood flow
16. hollow pointed end of a syringe
19. middling (e.g. of lymphocyte count)
20. microscopic tissue study
21. white blood cell
23. breathes air in and out
25. heart contraction
29. prefix meaning mucus / mucous membrane
30. rounded body part, esp. in the lungs brain or liver



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REQUIREMENTS FOR ENTRY

The only way of achieving such awareness is work experience. Whether you volunteer in a nursing home, shadow your local GP, visit a hospital and talk to staff, or care for an elderly or disabled relative, you should come away with a clear and realistic perspective of what illness can mean for patient and for doctor.

The ability to communicate well, to work in a team with a confident but not arrogant manner, and to be prepared as need arises to lead and take responsibility is important too. A sense of humour sprinkles oil on the wheels of communication.

Endurance, determination, and perseverance are part of the same package. They feed on dual enthusiasm for science and for the healing art of medicine. They are inspired by curiosity and enriched by sparks of initiative and originality. Lord Moran (Dean of St Mary's and Winston Churchill's doctor) once said, "The student who is not curious is surely no student at all; he is already old, and his thoughts are borrowed thoughts".

Becoming a doctor is not as formidable as it sounds, given good friends, teachers, and opportunities to learn, but it requires solid organisation of time and life and being self-propelled. Desirable characteristics for medicine do not end here. Balance is needed; balance which comes from an intellectual and personal life is broader and deeper than academic success alone. Prof. David Greenfield, first Dean of the University of Nottingham Medical School, referred to "balance of scientific and clinical excellence, humanitarian and compassionate concern ... balance of service and learning, balance of current competence and future adaptability". Other interests – literary, musical, artistic, and sporting – encourage achievement, provide recreation, and demand application, enthusiasm, and ability. They can become great stabilisers and good points of communication with both colleagues and patients. For a female accident and emergency consultant, to also be the medical officer for a well-known football club (not that she is a great player) is good for her and for her hospital.

Then there is the invaluable down-to-earth ability to organise and to cope; a capable pair of hands and a reassuring attitude of "leave it to me and I'll sort it out", taking huge weights off shoulders and loads off minds. Sir George Pickering, one-time Regius Professor of Medicine at Oxford, wrote, "Medicine is in some ways the most personal and responsible profession: the patient entrusts his life and wellbeing to his doctor. Thus, the character and personality of the doctor, his sympathy and understanding, his sense of responsibility, his selflessness are as important as his scientific and technical knowledge". He also pointed out that a doctor neither needs to nor should try to sort out every problem him or herself: "the best doctors know to whom to turn for help".

Many medical schools, when asked which qualities they regarded as most important in applicants to medicine, highlighted the desirability of a realistic understanding of what is demanded in the study of medicine and in the subsequent career. Without this embryo insight, many years of unhappiness may lie ahead, however bright and however gifted the student. Failure to understand the demands of the job and the limitations of the art may explain why some doctors drop out of medicine.

Applicants from medical backgrounds have an advantage in this respect. They have seen the effects of the career on their parents and families, and have had the opportunity to explore what their parent or parents do; they also have relatively easy access to observing other medical specialities. All the more regrettable if they have not taken this opportunity to find out what it is all about. For others, it is much more difficult. Most television medical programmes glamorise and trivialise, and give little insight into the everyday undramatic life of a doctor.

PCEM2

MEDICAL ENGLISH

UNIT SEVEN
EXERCISE
AND ASTHMA

"Physicians think they do a lot for a patient
when they give his disease a name."

Emmanuel ***KANT*** *(1724 - 1804)*

Fit Facts™

FROM THE AMERICAN COUNCIL ON EXERCISE®

EXERCISE AND ASTHMA

Many people with asthma believe exercise is not an option for them, that it will do more harm than good. The truth is that most asthmatics would likely benefit from some form of regular physical activity.

THE ABCs OF ASTHMA

Twelve percent to 15 percent of the population are considered asthmatics and suffer recurrent attacks of breathlessness. The severity of an asthma attack can vary greatly, from slight breathlessness to respiratory failure. Common symptoms include wheezing, a dry cough and tightness in the chest. Attacks may be brought on by an allergic response, a respiratory infection, tobacco smoke, air pollutants, anxiety or stress. Exercise induced asthma (EIA) is usually brought on by vigorous aerobic activity.

EXERCISING WITH ASTHMA

Despite the fact that asthma may be brought on by aerobic activity, exercise may still be a desirable option for many asthmatics. Research indicates that as tolerance for physical exertion is built up over time, it is less likely that an asthmatic will experience an attack during exercise. And, in addition to reducing the risk of developing many other diseases, appropriate exercise can help asthmatics reduce stress, sleep better and feel more energized. It might surprise you to know that even world-class athletes, such as Olympic gold medalist Jackie Joyner Kersee, continue to compete after being diagnosed with asthma.

Have a thorough medical evaluation and obtain your doctor's permission before beginning any type of exercise program. This is an absolutely essential first step. Your physician may prescribe medications that might further aid in controlling your condition. You will need specific instructions on when to take the medication before exercising and how long the effects will last. Once you have received clearance from your doctor to begin an exercise program, consider the following guidelines:

- Take extra time to warm up before exercising. A prolonged period of low-level aerobic activity will help prepare your body for higher-intensity exercise.

- Exercise toward the lower end of your target heart rate. Activities such as walking or swimming are great for asthmatics because they are low intensity and may be done for longer periods of time. Those who wish to participate in higher-intensity exercise, such as running or fast-paced sports, should slowly increase intensity over time. Rest when necessary and listen to what your body is telling you. Strength-training exercises are unlikely to cause an asthma attack if you rest between sets.
- Avoid exercising in polluted environments, or in cold or dry air.
- Don't rush through your cool down; extending it can help prevent the asthma attacks that occur immediately following an exercise session. A warm bath or shower may also help.

KEEP YOUR OPTIONS OPEN

Asthma does not necessarily mean you have to live an inactive life. Regular physical activity is one of the best things you can do for both your health and your overall well-being. As long as you and your physician are comfortable with your level of activity, nothing should keep you from doing the activities that keep you happy and healthy.

These exercises are listed in order from most to least likely to induce an asthma attack:

- outdoor running
- treadmill running
- cycling
- walking
- pool swimming

If you are interested in information on other health and fitness topics, contact: American Council on Exercise, 4851 Paramount Drive, San Diego, CA 92123, 800-825-3636; or, go online at http://www.acefitness.org and access the complete list of ACE *Fit Facts*.

I. READING COMPREHENSION:

A- TICK WHERE POSSIBLE:

Eventual causes of asthma attacks	Yes	No
allergic response		
nervousness or tension		
vigorous exercise		
wheezing		
air contaminants		
respiratory infection		

B- CORRECT THESE FALSE STATEMENTS:

1. Slight breathing difficulty is more severe than respiratory stoppage.

2. Wheezing, a dry cough and tightness in the chest may cause asthma attacks.

3. Tolerance for physical exertion is steady and invariable.

4. An asthmatic will probably have an attack during exercise, since endurance for physical practice develops gradually.

5. Once diagnosed with asthma, sportspeople cannot exercise anymore.

6. Swimming is not recommended for asthmatics.

C - ANSWER THE FOLLOWING QUESTIONS:

1. List the benefits of appropriate exercise:

– _____ – _____

– _____ – _____

2. What tasks should the physician see through concerning an asthmatic?

_____

_____

_____

_____

3. Compare between lower-intensity exercise and higher-intensity one.

_____

_____

_____

_____

D WHAT DO THE UNDERLINED EXPRESSIONS IN THE TEXT REFER TO?

• Twelve (§ 2): _____

• it (§ 7): _____

II. VOCABULARY:

A - FIND THE WORD THAT MEANS:

• noisy breathing sound (§2): _____

• caused by (§2): _____

• brought on (§2): _____

• permission to do something or for something to take place (§4): _____

• repetitions of an exercise done at one time (§4): _____

• a machine with an endless belt on which somebody can walk, jog, or run, used for exercise and stress testing (§6): _____

B - FIND THE OPPOSITE IN THE TEXT:

- productive (§2) ≠ _____
- feeble (§2) ≠ _____
- partial (§3) ≠ _____
- warm up (§6) ≠ _____
- allow (§6) ≠ _____

C - GIVE THE FRENCH EQUIVALENT:

- wheezing: _____
- breathlessness: _____
- respiratory failure: _____
- dry cough: _____
- heart rate: _____
- outdoor running: _____
- treadmill: _____

III. WRITING:

Write a brief summary of the text:

IV. LANGUAGE:

A - EXPLAIN:

- exercise-induced asthma: _____
- low-level aerobic activity: _____
- higher-intensity exercise: _____
- fast-paced sports: _____
- strength-training exercises: _____

B - EXPRESS DIFFERENTLY AS INDICATED:

1/ Most asthmatics would likely benefit from some form of regular exercise.

_____

2/ It is less likely that an asthmatic will experience an attack during exercise.

An asthmatic _____

3/ Strength–training exercises are unlikely to cause an asthma attack.

It is _____

4/ Attacks may be brought on by an allergic response.

An allergic response _____

5/ You will need specific instructions on when to take the medication before exercising.

Specific instructions _____

6/ Take extra time to warm up before exercising. ***(give advise)***

_____

7/Avoid exercising in polluted environment. ***(give advise)***

_____

8/ Running or fast-paced sports ***should*** always increase intensity over time.

_____

9/ Despite the fact that asthma may be brought on by aerobic activity, exercise may still be a desirable option for many asthmatics.

Although _____

_____

10/ A prolonged period of low-level aerobic activity will help prepare your body for higher intensity exercise.

Prior to _____

_____ is advisable.

C-MAKE SENTENCES ON ANALOGY WITH THE FOLLOWING:

1/ Once you have received clearance from your doctor to begin an exercise program, consider the following guidelines.

a. Have a thorough medical evaluation and obtain your doctor's permission, then start any type of exercise program.

_____

_____

b. Warm up, then start exercising.

_____

_____

2/ As long as you and your doctor are comfortable with your level of activity, nothing should keep you from doing the activities that keep you happy and healthy.

My parents don't care what medical specialty I choose. I'm happy.

_____

3/ In addition to reducing the risk of developing many other diseases, appropriate exercise can help asthmatics reduce stress.

Exercise prevents obesity - Exercise enhances vitality and energy.

_____

(Use "not only...but also")

a/ _____

_____

b/ Not only _____

_____

Give other expressions which require inversion when they occur at the beginning of the sentence:

_____

_____

D - RELATIVE CLAUSES:

Relative clauses give more information about something we have just mentioned in a sentence. There are 2 types of relative clauses:

TYPE A identifies which person or thing we mean exactly: called 'restrictive,' 'identifying' or 'defining' relative clause. Information in Restrictive Relative Clauses cannot be left out of a sentence:

It's the disease **that she caught last year.**

~~It's the disease.~~ This sentence is incomplete.

	Subject	Object	Possessive
People	**who / that:** Robert Koch is the scientist **who/that** found that a bacterium was the cause of the disease anthrax.	**who / whom / that:** Ferdinand J. Cohn is the German biologist **(who/whom/ that)** I read about.	**whose:** Ferdinand J. Cohn is the German biologist **whose** systematic classification of bacteria was published in 1872.
Animals/ Things	**which / that:** That's the kind of medicine **which/that** can treat bronchial asthma.	**which / that:** It's the kind of medicine **(which/that)** asthmatics should take.	**whose:** That's the disease **whose** cure is still out of reach. That's the drug whose side effects exceed its benefits.

* If the relative pronoun refers to the object of the sentence, it can be left out:

  This is the virus **(which/that)** he died of.

* Commas are **not** used in Restrictive Relative Clauses.

* The relative pronoun as the object can also be used after a preposition (for which, to whom, etc.). Now, the relative pronoun object is usually omitted and the preposition is put at the end of the clause:

  Louis Pasteur is the chemist to **whom** we owe the invention of the process of pasteurization. (formal)

  Louis Pasteur is the chemist we owe the invention of the process of pasteurization to.

* *Whom* as the object is now formal. Who is commonly used, except when to /for / with *whom* is used:

  Is she the patient **to whom** you prescribed the new medication?

  That's the drug company **for whom** you work, isn't it?

  He's the physician **with whom** I share an office.

  ~~He's the carrier whom I saw her with~~. He's the carrier who I saw her with.

TYPE B gives additional information about a person or thing: called 'non-restrictive,' 'non-identifying' or 'non-defining' relative clause. The sentence still makes sense without it:

Herceptin, **which suppresses rapid tumor growth**, enhances the effectiveness of chemotherapy.

Herceptin enhances the effectiveness of chemotherapy.

	Subject	Object	Possessive
People	**who:** Louis Pasteur, **who** is French, discovered that fermentation is caused by bacteria.	**who / whom:** Louis Pasteur, **who/whom** biologist Félix Pouchet disliked, is French.	**whose:** Louis Pasteur, **whose** discoveries are valuable, is French.
Animals/ Things	**which:** The novel, **which has already sold thousands of copies**, is the author's first one.	**which:** The book, **which I read last week**, is about haematology.	**whose:** Chronic bronchitis, **whose** main cause is smoking, is a serious and incurable disorder.

* Usually, the relative pronoun (who, whom, whose) cannot be left out, if it refers to the object of the sentence, especially in spoken English.
* Commas are used with non-restrictive relative clauses. Note possible changes in meaning between Type A (without commas) and Type B (with commas):

Louis Pasteur who is a world-renowned French chemist and biologist founded the science of microbiology.

(=It is the Louis Pasteur who is a world-renowned French chemist and biologist that I am referring to)

Louis Pasteur, who is a world-renowned French chemist and biologist, founded the science of microbiology.

(=Louis Pasteur founded the science of microbiology and also is a world-renowned French chemist and biologist)

RELATIVE ADVERBS (WHEN, WHERE, WHY) describe time, place and reason. They have a close relationship with the pattern: preposition + relative pronoun. Instead of a relative adverb, a preposition + which can be used:

Type	Relative Adverb	Preposition + which
Time	1796 was the year **when** the study of homeopathy was founded. May 6 was the day **when** she was operated. Twelve o'clock was the time **when** she finished delivery.	1796 was the year **in which** the study of homeopathy was founded. May 6 was the day **on which** she was operated. Twelve o'clock was the time **at which** finished delivery.
Place	That's the factory **where** they make chemicals. That's the spot **where** the hospital will be built. Africa is the continent **where** Koch travelled to study the causes of insect-borne diseases.	That's the company **in which** the new flu vaccine is manufactured. That's the spot **on which** the hospital will be built. Africa is the continent **to which** Koch travelled to study the causes of insect-borne diseases.
Reason	I'll tell you the reason **why** you'd better have injections.	I'll tell you the reason **for which** you'd better have injections.

* Relative adverbs can be omitted, except for **where** in some sentences.

WHATEVER, WHICHEVER, ETC...

Relative clauses beginning whatever, whichever, whoever, wherever or whenever are used to talk about someone or something when it does not matter what, which, who, etc:

Things	**whichever** **whatever**	Buy **whichever** medical book you want. (=any book you want)* Whichever comes usually before a noun. Whatever she can do to help, she will.
People	**whoever**	Invite **whoever** you like. (= anyone)
Places	**Wherever**	I'll go **wherever** I like.(= to any place)
Time	**Whenever**	Come **whenever** you like. (= at any time)

PRACTICE:

I. Make restrictive relative clauses. Replace the repeated expression in sentence "b" by a relative pronoun:

a. Asthma is a chronic disease.

b. There is no cure for asthma.

II. Make non-restrictive relative clauses. Replace the repeated expression in sentence "b" by a relative pronoun:

a. Up to half of all children develop asthma between the ages of 2 and 10.

b. Up to half of all children do outgrow their asthma.

III. Indicate the type of the relative clause and put a comma where possible:

1. Asthma is a chronic, inflammatory lung disease caused by oversensitivity of the lungs and airways which overreact to certain triggers by becoming inflamed and clogged, causing recurrent breathing problems, wheezing and coughing.
2. The symptoms of asthma which include coughing, wheezing, shortness of breath, tightness in the chest and night-time awakening due to any of the above are the indications of the disease experienced by the patient.
3. Clinical findings which include acute fever symptoms, enlarged lymph nodes, and sometimes exanthema help to identify a lymphatic reactive state.
4. The women prayed aloud all night which kept us awake.
5. She refuses to use machines which makes her work more arduous.
6. There is a reduction by half in glycogen utilization which allows postponing tiredness and exhaustion.
7. The vaccine-liposome mixture could be given in an inhaler which might make those who shy away from injections decide to become vaccinated against flu.
8. There has been an overall increase in fungal health care–associated infections (HAIs) in the last few decades which is likely a consequence of the advances in medical and surgical therapies.

IV. Combine using a relative pronoun:

1. The disease has various symptoms. Different asthma patients describe them in various ways.

_____

_____

2. The general structure of tissues has been studied for a long time. It is now well understood.

_____

_____

V. Fill in the blanks with a relative pronoun:

1. Patients_____feel their asthma is growing worse should as soon as possible see their physician_____may recommend a change in therapy, an adjustment to their medication dosage, or a different type of medicine.
2. To diagnose asthma, doctors use a combination of medical history, physical examination, and laboratory tests, such as spirometry,_____is a method of measuring the air taken into and expelled from the lungs; peak flow monitoring,_____is a method of measuring how much air a person can expel from his or her lungs); chest x-rays and blood or allergy tests.
3. The fine, "busy" structure of their nuclear chromatin allows them to be distinguished from myelocytes_____chromatin has a patchy, streaky structure, and also from lymphocytes_____have dense, homogeneous nuclei.
4. To encourage patients to make cost-effective use of the health care system, health insurance plans often include financial incentives to use outpatient services _____possible.
5. It should be remembered that the "normal" range of values is quite wide, especially for men, in _____ the normal range can be as much as 55% of the hematocrit!
6. The seeds of our new understanding were first sown in the 1960s,_____molecular biologists figured out how genetic information is organized, regulated and reproduced inside single-cell bacteria.
7. Marked poikilocytosis and anisocytosis are seen, and the large size of the erythrocytes is particularly conspicuous in comparison with the lymphocytes,_____diameter they exceed (megalocytes).
8. These cells can be interpreted as proerythroblasts and macroblasts_____maturation has been disturbed.
9. Cell composition in a pleural aspirate (prepared using a cytocentrifuge): variable cells,_____ similarity to cells in acute leukemia should be established by cytochemistry and marker analysis: lymphoblastic lymphoma.
10. The majority of white cells remain out of circulation, "marginated" in the epithelial lining of vessel walls or in extravascular spaces, from_____they may be quickly recruited back to the bloodstream. This phenomenon explains_____white cell counts can vary rapidly without or before any change has taken place in the rate of their production.

26

REQUIREMENTS FOR ENTRY

The BBC TV series Doctors to Be and Doctors At Large, following students through their years at St Mary's, and now for 20 years into their careers, are an exception and offer useful insights, even if the structure of the course itself has now changed. The rather embattled and disillusioned group of new doctors at the end of the first series has now been balanced by glimpses of where they are now, 10 years on, and reveals that they feel that it has all been worthwhile. A 20-year follow-up is now in preparation. As this is one of the most fundamental aspects of making an informed personal decision Learning Medicine puts less emphasis on the years in medical school and more on where they lead.

Personal health requirements and disability

A doctor's overriding responsibility is the safety and well-being of patients. As such all applicants to medical school must have the potential to function as a fully competent doctor and fulfil the rigorous demands of professional fitness to practise as stated by the General Medical Council. All applicants must therefore disclose any disabilities or medical conditions on the application form as they may affect the ability to practise medicine. This may be by placing patients at risk of infection, being unable to perform necessary medical procedures, or by impairing your judgement. Similarly, applicants must also complete a declaration that they have no criminal convictions or pending prosecutions, in line with national policies for staff working in sensitive roles. In most circumstances a declaration does not automatically disqualify an applicant but will allow the case to be decided on its own merits.

The UK Department of Health has requirements for specific conditions, which means that a student cannot be admitted with active tuberculosis or if infectious with hepatitis B, until they can be proven to be no longer infectious. In the case of hepatitis B, all prospective students must show proof of adequate immunisation before commencing the course. You will be asked for documentary proof when you arrive at medical school. Your own general practitioner (GP) can usually arrange for hepatitis B immunisation to be carried out. The course and testing for a satisfactory response can take up to 9 months, so you should discuss this with your GP at the earliest opportunity. If there is a failure to respond to the immunisation a student will be expected to prove that they are not infectious. In these rare circumstances, or where a student tests positive for any of the hepatitis B antigens, they should discuss this with their GP and the admissions tutor of their preferred school, as soon as possible.

There is no clear national policy as yet about candidates who are known to be hepatitis C positive. However, this must be declared on the UCAS form, and individual schools will advise in this rare instance. In any event, failure to disclose any condition that puts patients at risk will result in immediate dismissal from medical school. All students are advised to be immunised against meningococcal meningitis before starting at university.

Any disability should also be disclosed and will be dealt with by the schools on a case-by-case basis. Dyslexia should also be disclosed on the UCAS form and this will need to be supported by a formal statement from a suitably qualified psychologist. Most medical schools will advise relevant departments of the assistance which may be necessary for students with dyslexia and will make some time allowances in written examinations, but no concessions are made in clinical examinations.

Taking illegal drugs or abusing alcohol are also inconsistent with a doctor's professional responsibilities, both on patient safety grounds and the need for personal integrity. Students who ignore their responsibility to be utterly dependable in this regard put their place in medical school in severe jeopardy.

Academic requirements

Although academic achievement is only the qualifying standard for entering the real field of selection, like the Olympic qualifying standard is to selection for the national team, it is overwhelmingly the strongest element in selection. Unlike all the other desirable attributes of personality, attitude, and interest examination results look deceptively objective. Relatively objective they may be but they are still poor indicators of the potential to become "a good doctor" – a product difficult to define, not least because medicine is such a wide career that there may be many different sorts of good doctors – but they all need the appropriate knowledge, skills, and attitudes for effective medical practice and the ability to use them competently.

Examination results at the age of 18 years do not predict late developers nor do they take account of differences in educational opportunity at school nor of support for study at home. Results may also be upset by ill health on the day; even minor illness or discomfort crucially timed may take the gloss off the performance, a gloss which may make all the difference between a place at medical school and no place at all. Having said that, however, those who fail during the medical course are generally those with the poorest A level results, and those who do best, especially in the early years with their greater scientific content, are generally those with the highest. But there are outstanding exceptions.

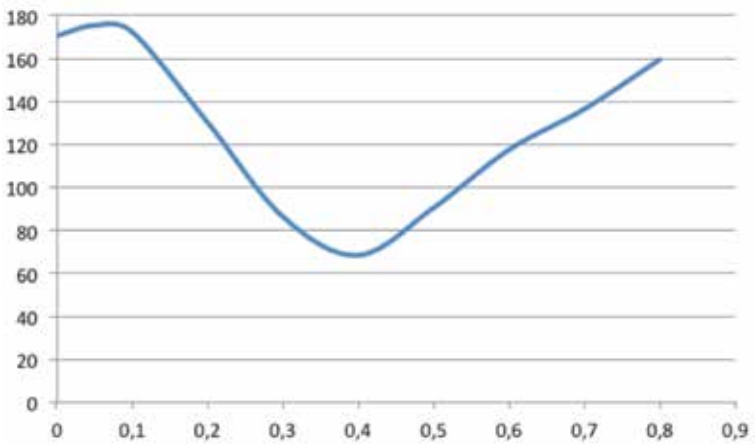
PCEM2

MEDICAL ENGLISH

REVISION

1. COMPLETE THE GRAPH AND GIVE IT A TITLE:

Left ventricular volumes with respect to time within the cardiac cycle			
0.0 sec.	170 ml.	0.4 sec.	68 ml.
0.05	175	0.5	90
0.1	172	0.6	117
0.2	130	0.7	136
0.3	86	0.8	159



Make sentences using the words/phrases below

a) vertical axis

b) horizontal axis

c) maximum

d) minimum

e) between 0.05 and 0.4 sec.

f) between 0.4 and 0.8 sec.

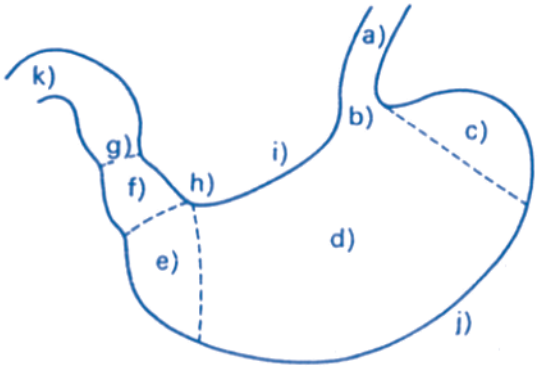
g) rate of increase/rate of decrease (comparison)

Complete the description of the above graph:

The graph shows the_____of_____in the_____ between heart beats. The_____represents the volume of_____ in_____, and the_____ From the graph, we can see that the _____volume occurs at 0.05_____when the value is_____ From that point the volume_____until it reaches its_____ of_____after _____ Then it increases to_____ Therefore, the volume decreases _____than it increases.

2. READ THE PASSAGE AND LABEL THE DIAGRAMS:

The stomach



This is a dilatation of the alimentary canal between the oesophagus and the duodenum. Although variable in size and shape it is usually J-shaped. The stomach is divided into a fundus, a body and a pyloric portion. It has anterior and posterior surfaces, and lesser and greater curvatures. The fundus is that part above the level of the oesophageal opening (cardiac orifice). The body extends from the fundus to the angular notch (the lowest part of the lesser curvature) and the pyloric portion from the notch to the pyloric sphincter (pylorus) which separates the stomach from the duodenum. The pyloric part has two sections: a proximal dilated pyloric antrum and a distal tubular pyloric canal. The lesser curvature is the upper medial border, which extends from the right of the oesophagus to the pylorus. The angular notch is near its lower end. The greater curvature extends from the left of the oesophagus around the fundus to the pylorus, forming the lateral border of the stomach.

Say whether these statements are true or false. Correct the false ones:

a) The stomach is a tubular organ, like the other parts of the digestive system. ☐ True ☐ False

_____

b) The stomach is situated medial to the oesophagus and duodenum. ☐ True ☐ False

_____

c) The fundus is superior to the cardiac orifice. ☐ True ☐ False

_____

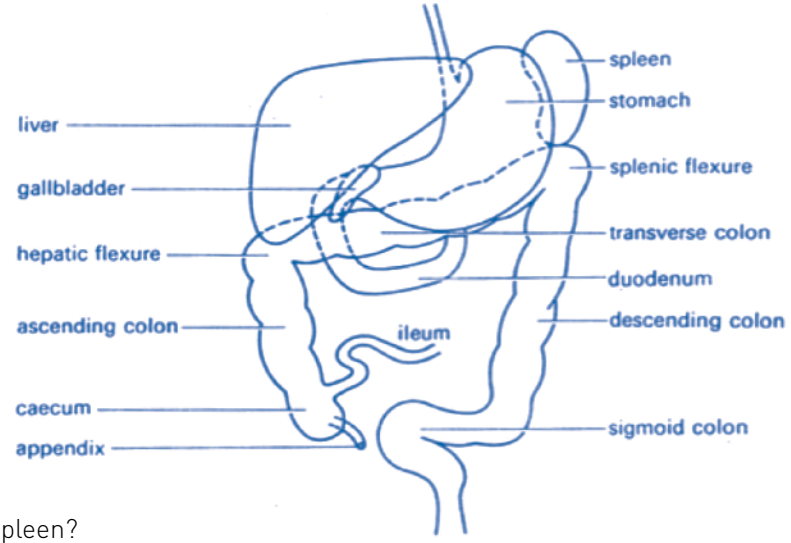
d) The duodenum is distal to the pyloric canal. ☐ True ☐ False

_____

e) The angular notch is on the anterior surface of the stomach. ☐ True ☐ False

3. LOOK AT THE DIAGRAM AND ANSWER THE QUESTIONS:

Anterior aspect of some organs of the abdomen



a) What are the posterior relations of the transverse colon?

Posteriorly, the transverse colon is related to _____

b) Where is the stomach in relation to the transverse colon?

The stomach is_____ to the transverse colon.

c) Where does the stomach lie in relation to the spleen?

_____

d) Where is the liver in relation to the colon?

_____

e) What are the anterosuperior relations to the transverse colon, from left to right?

_____

f) What are the relations of the spleen?

_____

g) Where does the appendix arise?

_____

h) What are the relations of the gallbladder?

_____

4. READ THIS PASSAGE ABOUT THE ASCENDING COLON.

The ascending colon extends from the ileocaecal orifice to the right colic (hepatic) flexure, which is in contact superiorly with the under-surface of the right lobe of the liver. Posteriorly it lies on the lower part of the right kidney. Its anterior and medial surfaces are in contact with coils of the small intestine.

Write a similar passage about the descending colon:

The descending colon extends from _____, which is _____, to _____

Posteriorly_____.Its_____

surfaces are_____

A - EXPRESS DIFFERENTLY AS INDICATED:

1. hospital-acquired infections / get / numerous (gradual increase)

2. Because they are low intensity, activities such as walking or swimming are great for asthmatics.

Thanks to

3. The female student commented: «It all seems much bigger than what I've been used to.»

The female student commented that

4. The female student noted: «I'm just starting the preclinical course.»

The female student noted that

5. The male student explained: «Your main exams will be at the end of the preclinical course.»

The male student explained that

6. The male student added: «...and that's when the real learning begins.»

The male student added that

B CHANGE INTO DIRECT SPEECH:

1. Mrs Smith told the doctor her head had been hurting all day.

2. Her husband declared that he knew something significantly had changed.

C - WORD PLACING

Fill in the blanks with words from the box:

American Medical Student Association

graduates **licensure** **patient** **enhancement** **inherent**

AMSA's international members are a large portion of our membership with over 60 chartered chapters around the world. Our goals are to unite these international chapters, to distribute information about medical education,_____, and practice, and to represent the needs and interests of international students through an active voice within the largest association of American medical students.

What can you do as an international medical student member?

At the local level, AMSA international chapters serve as unifying groups and resources for students interested in American medical education and practice, participation in the local community, and ._____ of their medical school experience. At the national level, international members participate in:

- **AMSA's National Convention**
- **House of Delegates, defining AMSA's operating policies & principles**
- **AMSA Conferences**
- **Meetings and Student Opportunities**
- **International Trustee on the Board of Trustees**

Through these avenues we are able to advance the Association's strategic priorities and promote the interests of international medical _____(IMGs) in the United States.

AMSA provides a great variety of membership benefits and opportunities to all its members and as international members, we add a unique perspective to the association. The major benefit of AMSA membership is your _____ _____(and hopefully active) contribution to our collective voice and to the improvement of worldwide medical education and _____care.

We hope you will join us.

D - REORDER THE FOLLOWING ITEMS TO GET THE ENGLISH EQUIVALENT OF THE SENTENCES IN FRENCH:

1. mettre un malade sous traitement a/on/put/a/to/treatment/patient

_____

2. Je me suis fait une piqûre. shot / I / (get)/ a/

_____

3. mode d'administration d'un médicament drug/of/a/route/administration/of

_____

4. medicament en vente libre counter/medicine/the/over

---

5. Si la douleur avait était aigue, j'aurais demandé des soins médicaux.

[conjugate the verbs in parentheses in the right tense]

attention/pain/I/if/medical/the/severe/(be)/(seek)

---

6. Un traitement d'une durée de 16 à 24 semaines est normalement suffisant pour parvenir à une rémission.

[make a compound adjective of the underlined part & conjugate the verbs in parentheses in the right tense/form]

week/to/sufficient/remission/24/to/course/16/a/long/normally/treatment/(achieve)/(be)

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REQUIREMENTS FOR ENTRY

All medical schools set a minimum standard of at least AAB at A level. The actual achievement of entrants is very similar at all universities whatever their target requirements, except Oxford and Cambridge, where they are higher. Medical schools which set marginally lower grades leave themselves the flexibility to make allowances for special situations and to give due weight to outstanding non-academic attributes. Most successful applicants to medical schools setting a lower minimum substantially exceed their requirements. It is vital to realise that good grades do not guarantee a place: far more applicants achieve the necessary grades than can be given a place.

Chemistry or physical science is required by all universities for medicine. They prefer this at A level, but practically all of the medical schools in the UK are prepared to accept AS chemistry in place of A level. Most are prepared to accept a combination of AS levels in place of another science or mathematics A level. In practice, AS levels are normally offered in addition to three A levels and not in substitution for one. Many universities prefer two other science subjects at A level, taken from the group of physics (unless physical science is offered), biology, and mathematics, but all are prepared to accept a good grade in an arts subject in place of one, or in some medical schools, two science subjects. Some medical schools do not accept mathematics and higher mathematics together as two of the required three A level subjects. General studies A level is generally not acceptable as one of the subjects.

All medical schools are prepared to accept one and sometimes more than one non-science or mathematics A level. No particular non-science subjects are favoured but knowledge-based rather than practical skills-based subjects are generally preferred. It may be difficult to compare grades in arts and science subjects, so a higher target may be set for an arts subject for entry to medicine. Several universities express a preference for biology over physics or mathematics. Chemistry and biology are the foundations of medical science, especially if the mathematical aspects of those subjects are included. But however useful it is to be numerate in medicine, especially in research, students without a good knowledge of biology find themselves handicapped at least in the first year of the course by their lack of understanding of cell and organ function and its terminology. They also generally have greater difficulty in expressing themselves in writing, especially if their first language is not English. Failure in the first 2 years of the medical course is more common in those who did not take biology at A level.

All universities require good grades in science and mathematics at GCSE level if not offered at A level, together with English language.

The relative popularity with applicants of mathematics over biology does not indicate changed perception of the value of mathematics for medicine but reflects the general usefulness of mathematics for entry to alternative science courses. It may also be because good mathematicians (or average mathematicians with good teachers) can expect higher grades in mathematics than in the more descriptive subject of biology. A few applicants gain excellent grades at A level in four subjects; for example, chemistry, physics, biology, and mathematics or the less appropriate combination for medicine of chemistry, physics or biology, mathematics, and higher mathematics. It is a better strategy for admission to achieve three good grades than four indifferent ones.

Scottish Highers and Advanced Highers are the usual entry qualification offered by Scottish applicants, most of whom apply to study at Scottish medical schools. Scottish qualifications are accepted by medical schools in England, Wales, and Northern Ireland. The Scottish academic tests are accompanied by formal testing of core study skills needed for understanding a university course: personal effectiveness and problem-solving, communication, numeracy, and information technology.

Both the International Baccalaureate and the European Baccalaureate are acceptable entry qualifications at UK medical schools and rapidly increasing numbers of applicants offer those qualifications. Requirements vary at different schools and can be found in the UCAS publication. A few students enter medicine with BTEC/SCOT BTEC National Diploma Certificate. The Advanced General National Vocational Qualification (GNVQ) or General Scottish Vocational Qualification (GSVQ) are not generally accepted unless combined with other qualifications, although some universities are prepared to consider it on an individual basis. It is likely that a distinction would be required, along with a high grade in GCE A level, probably in chemistry.

For applicants who want to pursue a career in medicine but lack a science background, a solution lies in the form of a premedical/foundation course. These are 1-year long and provide students with good grades in non-science subjects the opportunity to study basic science, providing a route into studying the full medical degree. Medical schools that currently offer foundation courses are Bristol, Cardiff, Dundee, Edinburgh, Guy's King's & St Thomas' London, Manchester, and Sheffield.

PCEM2

MEDICAL ENGLISH

APPENDIX

STUDENTS' ORAL PRESENTATIONS

Students must be prepared to make an oral presentation for which they will have a mark on 10 points. It consists of a 5-to-10-minute talk on any topic, either elaborated on powerpoint slides (12 to 15 slides), or any other means. Preparations must be personal but presentations can be carried out in solos, duals or more. Short sketches are also very welcome.

Note that this is not a reading task; it is a speaking activity. Therefore, students should keep away from reading what they typed on the slides. Special attention must be paid to language and pronunciation. The students in attendance are supposed to take notes to ask questions for an ultimate brief debate.

After choosing a topic, students must send its title with their name, class, group and date of their presentation to the following e-mail address: **rafla.bahroun@gmail.com**. Once they have received a confirmation, they are expected to copy their presentation on a CD, mentioning their name, class, group and title of the project.

TENSES

N.B.: By "verb" I mean "infinitive without to" also called "bare infinitive."

Tense	Rule	Example
simple present	verb verb + (e)s	I/you/we/they **do/write/cry** he/she/it **does/writes/cries**
simple past	regular verbs: verb + ed irregular verbs: see example	listened - talked - walked did - wrote - read - spoke
Future	will + verb	**will do**
present progressive	be in the present + verb-ing	I **am doing** he/she/it **is doing** you/we/they **are doing**
past progressive	be in the past + verb-ing	I/he/she/it **was doing** you/we/they **were doing**
future progressive	will + be + verb-ing	**will be doing**
present perfect	have (in the simple present) + past participle	I/you/we/they **have done** he/she/it **has done**
past perfect	had + past participle	**had done**
future perfect	will + have + past participle	**will have done**
present perfect progressive	have (in the simple present) + been + verb-ing	I/you/we **have been doing** he/she/it **has been doing**
past perfect progressive	had + been + verb-ing	**had been doing**
future perfect progressive	will + have + been + verb-ing	**will have been doing**

conditional	If + simple present + future
	If + simple past + present conditional
	If + past perfect + past conditional
		If + do + will do
		If + did + would do
		If + had done + would have done

subjunctive	It's necessary..., / It's important..., / I recommend.., / I suggest... + that + subject + (should) + bare infinitive	*** It's important that he <u>should obey</u> his parents.** *** It's necessary that he <u>obey</u> his parents.**

PUNCTUATION MARKS

Symbol	Nomination	Definition
,	Comma	a punctuation mark used to **indicate a separation of ideas or elements within the structure of a sentence**
.	Period	a punctuation mark **indicating a full stop, placed especially at the end of a declarative sentence**
:	Colon	a punctuation mark used to **introduce a quotation, an explanation, an example**, or **a series**
;	Semicolon	a punctuation mark used to **connect independent clauses and indicating a closer relationship between the clauses than a period does**
-	Dash	a punctuation mark used to **indicate a break or omission**
!	exclamation point/ exclamation mark	a punctuation mark **used after an exclamation** (an exclamation is a sudden forceful utterance)
?	question mark / interrogation point	a punctuation symbol written **at the end of a sentence or phrase to indicate a direct question**
“” / ‘’	quotation mark	punctuation marks used to mark the **beginning and end of a passage attributed to another and repeated word for word**
( )	Parentheses	upright curved lines used to mark off **explanatory or qualifying remarks** or enclose a mathematical expression
[ ]	brackets/square brackets	marks used to **enclose written or printed material**

USEFUL EXPRESSIONS FOR ESSAY-WRITING

Use	Expression
opinion	I think..., I feel..., in my opinion..., in my view..., I reckon..., as far as I am concerned..., from my point of view..., It would seem..., It would appear..., I may go as far as to say..., as it were..., according to the text..., to him..., to the writer... ***Don't say "according to me," because "according to" is used to introduce somebody else's opinion.***
suggestion	I suggest doing..., I suggest that you should..., I would suggest doing..., It would be a good idea if..., it's time you did...
advice	you should..., you'd better..., the best thing you can do is..., I would advise you to..., I would recommend you to..., if I were you..., it's essential that you should..., it's vital that you should..., it's better...
attitude	frankly..., honestly..., obviously..., probably..., presumably..., no doubt..., fortunately..., unfortunately...
sequence of an argument	first of all..., to begin with..., in the first place..., secondly..., for another thing..., thirdly...
connection	therefore..., in addition..., moreover..., however..., nevertheless..., nonetheless..., on the other hand..., yet ("pourtant" in French)..., all the same..., anyway..., at any rate..., in my case..., after all..., at least..., actually..., in fact..., as a matter of fact..., similarly..., besides..., compared to..., as well as..., as regards..., as for..., as to..., regarding..., in this respect..., in this connection..., in connection with..., furthermore..., on the contrary..., in other words..., put otherwise...
examples	for instance..., for example..., such as...,
exceptions	including..., in particular..., apart from..., except..., with the exception of..., and so on..., and so forth...
generalizations	generally speaking..., in general..., as a rule..., on the whole..., in most cases..., in the vast majority of cases..., in a large number of cases..., in theory..., in practice..., in many ways..., to that extent..., to a large (great) extent..., to some extent..., basically..., up to a point..., by no means...,
conclusion	finally..., to sum up..., in a word..., in conclusion..., to conclude..., in a nutshell...

Base verbale		Prétérit		Participe passé		Traduction
abide	ə'baɪd	abode	ə'bəʊd	abode	ə'bəʊd	supporter
arise	ə'raɪz	arose	ə'rəʊz	arisen	ə'rɪzn	survenir, surgir
awake	ə'weɪk	awoke	ə'wəʊk	awoken	ə'wəʊkən	se réveiller
be	biː	was/were	wɒz/wɜː	been	biːn	être
bear	beə	bore	bɔː	borne	bɔːn	porter, supporter
beat	biːt	beat	biːt	beaten	'biːtn	battre
become	bɪ'kʌm	became	bɪ'keɪm	become	bɪ'kʌm	devenir
befall	bɪ'fɔːl	befell	bɪ'fel	befallen	bɪ'fɔːlən	arriver, survenir
beget	bɪ'get	begot	bɪ'gɒt	begotten	bɪ'gɒtn	engendrer, causer
begin	bɪ'gɪn	began	bɪ'gæn	begun	bɪ'gʌn	commencer
behold	bɪ'həʊld	beheld	bɪ'held	beheld	bɪ'held	contempler
bend	bend	bent	bent	bent	bent	plier, courber
beseech	bɪ'siːtʃ	besought	bɪ'sɔːt	besought	bɪ'sɔːt	implorer
beset	bɪ'set	beset	bɪ'set	beset	bɪ'set	assaillir
bet	bet	bet	bet	bet	bet	parier
bid	bɪd	bid, bade	bɪd	bidden, bid	'bɪdn	inviter, ordonner
bind	baɪnd	bound	baʊnd	bound	baʊnd	attacher, lier
bite	baɪt	bit	bɪt	bitten	'bɪtn	mordre
bleed	bliːd	bled	bled	bled	bled	saigner
bless	bles	blessed	blest	blessed	blest	bénir
blow	bləʊ	blew	bluː	blown	bləʊn	souffler
break	breɪk	broke	brəʊk	broken	'brəʊkn	casser
breed	briːd	bred	bred	bred	bred	élever, se reproduire
bring	brɪŋ	brought	brɔːt	brought	brɔːt	apporter
broadcast	'brɔːdkɑːst	broadcast	'brɔːdkɑːst	broadcast	'brɔːdkɑːst	diffuser, émettre
browbeat	braʊbiːt	browbeat	braʊbiːt	browbeaten	braʊbiːtn	intimider
build	bɪld	built	bɪlt	built	bɪlt	construire
burn	bɜːn	burnt	bɜːnt	burnt	bɜːnt	brûler
burst	bɜːst	burst	bɜːst	burst	bɜːst	éclater
bust	bʌst	bust	bʌst	bust	bʌst	attraper, démanteler
buy	baɪ	bought	bɔːt	bought	bɔːt	acheter
cast	kɑːst	cast	kɑːst	cast	kɑːst	lancer, jeter
catch	kætʃ	caught	kɔːt	caught	kɔːt	attraper
chide	tʃaɪd	chid	tʃɪd	chidden	'tʃɪdn	gronder, réprimander
choose	tʃuːz	chose	tʃəʊz	chosen	'tʃəʊzn	choisir
cleave	kliːv	clove, cleft	kləʊv/kleft	cloven, cleft	'kləʊvn	diviser, fendre
cleave	kliːv	cleaved	kliːvd	cleaved	kliːvd	coller, adhérer
cling	klɪŋ	clung	klʌŋ	clung	klʌŋ	suspendre
come	kʌm	came	keɪm	come	kʌm	venir
cost	kɒst	cost	kɒst	cost	kɒst	coûter
creep	kriːp	crept	krept	crept	krept	ramper
cut	kʌt	cut	kʌt	cut	kʌt	couper
deal	diːl	dealt	delt	dealt	delt	distribuer, traiter
dig	dɪg	dug	dʌg	dug	dʌg	creuser, fouiller
dive	daɪv	dove	daʊv	dived	daɪvd	plonger
do	duː	did	dɪd	done	dʌn	faire
draw	drɔː	drew	druː	drawn	drɔːn	dessiner
dream	driːm	dreamt	dremt	dreamt	dremt	rêver
drink	drɪŋk	drank	dræŋk	drunk	drʌŋk	boire
drive	draɪv	drove	draʊv	driven	drɪvn	conduire
dwell	dwel	dwelt	dwelt	dwelt	dwelt	habiter, demeurer
eat	iːt	ate	eɪt	eaten	'iːtn	manger
fall	fɔːl	fell	fel	fallen	'fɔːlən	tomber
feed	fiːd	fed	fed	fed	fed	nourrir
feel	fiːl	felt	felt	felt	felt	(res)sentir
fight	faɪt	fought	fɔːt	fought	fɔːt	se battre, combattre
find	faɪnd	found	faʊnd	found	faʊnd	trouver
flee	fliː	fled	fled	fled	fled	s'enfuir
fling	flɪŋ	flung	flʌŋ	flung	flʌŋ	jeter, lancer
floodlight	flʌdlaɪt	floodlit	flʌdlɪt	floodlit	flʌdlɪt	illuminer, éclairer

à suivre...

Base verbale		Prétérit		Participe passé		Traduction
fly	flaɪ	flew	fluː	flown	fləʊn	voler (air)
forbear	fɔːˈbeə	forbore	fɔːˈbɔː	forborne	fɔːˈbɔːn	s'abstenir
forbid	fəˈbɪd	forbade	fəˈbeɪd	forbidden	fəˈbɪdn	interdire
forecast	ˈfɔːkɑːst	forecast	ˈfɔːkɑːst	forecast	ˈfɔːkɑːst	prévoir
forego	fɔːˈgəʊ	forewent	fɔːˈwent	foregone	fɔːˈgɒn	renoncer à
foresee	fɔːˈsiː	foresaw	fɔːˈsɔː	foreseen	fɔːˈsiːn	prévoir, présager
foretell	fɔːˈtel	foretold	fɔːˈtəʊld	foretold	fɔːˈtəʊld	prédire
forget	fəˈget	forgot	fəˈgɒt	forgotten	fəˈgɒtn	oublier
forgive	fəˈgɪv	forgave	fəˈgeɪv	forgiven	fəˈgɪvn	pardonner
forsake	fəˈseɪk	forsook	fəˈsʊk	forsaken	fəˈseɪkən	abandonner
forsware	fɔːˈsweə	forswore	fɔːˈswɔː	forsworn	fɔːˈswɔːn	abjurer
freeze	friːz	froze	frəʊz	frozen	ˈfrəʊzn	geler
gainsay	ˌgeɪnˈseɪ	gainsaid	ˌgeɪnˈseɪd	gainsaid	ˌgeɪnˈseɪd	contredire
get	get	got	gɒt	got	gɒt	obtenir
give	gɪv	gave	geɪv	given	ˈgɪvn	donner
go	gəʊ	went	went	gone	gɒn	aller
grind	graɪnd	ground	graʊnd	ground	graʊnd	moudre
grow	grəʊ	grew	gruː	grown	grəʊn	grandir, pousser
hamstring	ˈhæmstrɪŋ	hamstrung	ˈhæmstrʌŋ	hamstrung	ˈhæmstrʌŋ	couper les jarrets à
hang	hæŋ	hung	hʌŋ	hung	hʌŋ	accrocher
have	hæv	had	hæd	had	hæd	avoir
hear	hɪə	heard	hɜːd	heard	hɜːd	entendre
heave	hiːv	hove	həʊv	hove	həʊv	soulever, hisser
hew	hjuː	hewed	hjuːd	hewn	hjuːn	couper, tailler
hide	haɪd	hid	hɪd	hidden	ˈhɪdn	(se) cacher
hit	hɪt	hit	hɪt	hit	hɪt	frapper
hold	həʊld	held	held	held	held	tenir
hurt	hɜːt	hurt	hɜːt	hurt	hɜːt	blesser
inlay	ˌɪnˈleɪ	inlaid	ˌɪnˈleɪd	inlaid	ˌɪnˈleɪd	incruster
input	ˈɪnpʊt	input	ˈɪnpʊt	input	ˈɪnpʊt	enter, introduire
inset	ˈɪnset	inset	ˈɪnset	inset	ˈɪnset	insérer
interweave	ˌɪntəˈwiːv	interwove	ˌɪntəˈwəʊv	interwoven	ˌɪntəˈwəʊvn	(s') entrelacer
keep	kiːp	kept	kept	kept	kept	garder
kneel	niːl	knelt	nelt	knelt	nelt	s'agenouiller
knit	nɪt	knit	nɪt	knit	nɪt	tricoter
know	nəʊ	knew	njuː	known	nəʊn	savoir
lay	leɪ	laid	leɪd	laid	leɪd	étendre, mettre
lead	liːd	led	led	led	led	mener
lean	liːn	leant	lent	leant	lent	(s')appuyer, pencher
leap	liːp	leapt	lept	leapt	lept	sauter, bondir
learn	lɜːn	learnt	lɜːnt	learnt	lɜːnt	apprendre
leave	liːv	left	left	left	left	partir, laisser
lend	lend	lent	lent	lent	lent	prêter
let	let	let	let	let	let	laisser, permettre
lie	laɪ	lay	leɪ	lain	leɪn	être étendu
light	laɪt	lit	lɪt	lit	lɪt	allumer
lose	luːz	lost	lɒst	lost	lɒst	perdre
make	meɪk	made	meɪd	made	meɪd	faire, fabriquer
mean	miːn	meant	ment	meant	ment	signifier
meet	miːt	met	met	met	met	rencontrer
miscast	ˌmɪsˈkɑːst	miscast	ˌmɪsˈkɑːst	miscast	ˌmɪsˈkɑːst	mal distribuer un rôle
mishear	ˌmɪsˈhɪə	misheard	ˌmɪsˈhɜːd	misheard	ˌmɪsˈhɜːd	mal entendre
mishit	ˌmɪsˈhɪt	mishit	ˌmɪsˈhɪt	mishit	ˌmɪsˈhɪt	mal jouer
mislay	ˌmɪsˈleɪ	mislaid	ˌmɪsˈleɪd	mislaid	ˌmɪsˈleɪd	égarer
misread	ˌmɪsˈriːd	misread	ˌmɪsˈred	misread	ˌmɪsˈred	mal lire
misspell	ˌmɪsˈspel	misspelt	ˌmɪsˈspelt	misspelt	ˌmɪsˈspelt	mal orthographier
misspend	ˌmɪsˈspend	misspent	ˌmɪsˈspent	misspent	ˌmɪsˈspent	gaspiller
mistake	mɪˈsteɪk	mistook	mɪˈstʊk	mistaken	mɪˈsteɪkən	se tromper
misunderstand	ˌmɪsʌndəˈstænd	misunderstood	ˌmɪsʌndəˈstʊd	misunderstood	ˌmɪsʌndəˈstʊd	mal comprendre
mow	məʊ	mowed	məʊd	mown	məʊn	tondre

Base verbale		Prétérit		Participe passé		Traduction
offset	'ɒfset	offset	'ɒfset	offset	'ɒfset	contrebalancer
outbid	ˌaʊt'bɪd	outbid	ˌaʊt'bɪd	outbid	ˌaʊt'bɪd	surenchérir
outdo	ˌaʊt'duː	outdid	ˌaʊt'dɪd	outdone	ˌaʊt'dʌn	surpasser, renchérir
outfight	ˌaʊt'faɪt	outfought	ˌaʊt'fɔːt	outfought	ˌaʊt'fɔːt	dominer
outgrow	ˌaʊt'grəʊ	outgrew	ˌaʊt'gruː	outgrown	ˌaʊt'grəʊn	être trop grand pour
output	'aʊtpʊt	output	'aʊtpʊt	output	'aʊtpʊt	sortir les données
outrun	ˌaʊt'rʌn	outran	ˌaʊt'ræn	outrun	ˌaʊt'rʌn	distancer
outsell	ˌaʊt'sel	outsold	ˌaʊt'səʊld	outsold	ˌaʊt'səʊld	mieux (se) vendre que
outshine	ˌaʊt'ʃaɪn	outshone	ˌaʊt'ʃɒn	outshone	ˌaʊt'ʃɒn	éclipser, surpasser
overcome	ˌəʊvə'kʌm	overcame	ˌəʊvə'keɪm	overcome	ˌəʊvə'kʌm	triompher de
overdo	ˌəʊvə'duː	overdid	ˌəʊvə'dɪd	overdone	ˌəʊvə'dʌn	exagérer
overdraw	ˌəʊvə'drɔː	overdrew	ˌəʊvə'druː	overdrawn	ˌəʊvə'drɔːn	dépasser son crédit
overeat	ˌəʊvər'iːt	overate	ˌəʊvər'et	overeaten	ˌəʊvər'iːtn	trop manger
overfly	ˌəʊvə'flaɪ	overflew	ˌəʊvə'fluː	overflown	ˌəʊvə'fləʊn	survoler
overhang	ˌəʊvə'hæŋ	overhung	ˌəʊvə'hʌŋ	overhung	ˌəʊvə'hʌŋ	surplomber
overhear	ˌəʊvə'hɪə	overheard	ˌəʊvə'hɜːd	overheard	ˌəʊvə'hɜːd	entendre par hasard
overlay	ˌəʊvə'leɪ	overlaid	ˌəʊvə'leɪd	overlaid	ˌəʊvə'leɪd	(re)couvrir (de)
overpay	ˌəʊvə'peɪ	overpaid	ˌəʊvə'peɪd	overpaid	ˌəʊvə'peɪd	surpayer
override	ˌəʊvə'raɪd	overrode	ˌəʊvə'rəʊd	overridden	ˌəʊvə'rɪdn	passer outre à
overrun	ˌəʊvə'rʌn	overran	ˌəʊvə'ræn	overrun	ˌəʊvə'rʌn	envahir, occuper
oversee	ˌəʊvə'siː	oversaw	ˌəʊvə'sɔː	overseen	ˌəʊvə'siːn	surveiller
overshoot	ˌəʊvə'ʃuːt	overshot	ˌəʊvə'ʃɒt	overshot	ˌəʊvə'ʃɒt	dépasser
oversleep	ˌəʊvə'sliːp	overslept	ˌəʊvə'slept	overslept	ˌəʊvə'slept	trop dormir
overspend	ˌəʊvə'spend	overspent	ˌəʊvə'spent	overspent	ˌəʊvə'spent	trop dépenser
overtake	ˌəʊvə'teɪk	overtook	ˌəʊvə'tʊk	overtaken	ˌəʊvə'teɪkən	rattraper, dépasser
overthrow	ˌəʊvə'θrəʊ	overthrew	ˌəʊvə'θruː	overthrown	ˌəʊvə'θrəʊn	vaincre, renverser
overwrite	ˌəʊvə'raɪt	overwrote	ˌəʊvə'rəʊt	overwritten	ˌəʊvə'rɪtn	écraser des données
partake	pɑː'teɪk	partook	pɑː'tʊk	partaken	pɑː'teɪkən	prendre part à
pay	peɪ	paid	peɪd	paid	peɪd	payer
plead	pliːd	pled	pled	pled	pled	implorer, plaider
proofread	'pruːfriːd	proofread	'pruːfred	proofread	'pruːfred	corriger
prove	pruːv	proved	pruːvd	proven	'pruːvn	prouver
put	pʊt	put	pʊt	put	pʊt	mettre, poser
quit	kwɪt	quit	kwɪt	quit	kwɪt	abandonner, démissionner
read	riːd	read	red	read	red	lire
rebuild	ˌriː'bɪld	rebuilt	ˌriː'bɪlt	rebuilt	ˌriː'bɪlt	reconstruire
recast	ˌriː'kɑːst	recast	ˌriː'kɑːst	recast	ˌriːkɑːst	remanier (texte, rôles)
redo	ˌriː'duː	redid	ˌriː'dɪd	redone	ˌriː'dʌn	refaire
rehear	ˌriː'hɪə	reheard	ˌriːhɜːd	reheard	ˌriː'hɜːd	(Droit) rejuger
remake	ˌriː'meɪk	remade	ˌriː'meɪd	remade	ˌriː'meɪd	refaire
rend	rend	rent	rent	rent	rent	fendre, déchirer
repay	rɪ'peɪ	repaid	rɪ'peɪd	repaid	rɪ'peɪd	rembourser
rerun	ˌriː'rʌn	reran	ˌriː'ræn	rerun	ˌriː'rʌn	rediffuser, recourir
resell	ˌriː'sel	resold	ˌriː'səʊld	resold	ˌriː'səʊld	revendre
reset	ˌriː'set	reset	ˌriː'set	reset	ˌriː'set	remettre
resit	ˌriː'sɪt	resat	ˌriː'sæt	resat	ˌriː'sæt	repasser (examen)
retake	ˌriː'teɪk	retook	ˌriː'tʊk	retaken	ˌriː'teɪkən	reprendre
retell	ˌriː'tel	retold	ˌriː'təʊld	retold	ˌriː'təʊld	raconter de nouveau
rewind	ˌriː'waɪnd	rewound	ˌriː'waʊnd	rewound	ˌriː'waʊnd	rembobiner
rewrite	ˌriː'raɪt	rewrote	ˌriː'rəʊt	rewritten	ˌriː'rɪtn	récrire
rid	rɪd	rid	rɪd	rid	rɪd	débarrasser
ride	raɪd	rode	rəʊd	ridden	'rɪdn	monter (à vélo…)
ring	rɪŋ	rang	ræŋ	rung	rʌŋ	sonner
rise	raɪz	rose	rəʊz	risen	'rɪzn	se lever (soleil)
run	rʌn	ran	ræn	run	rʌn	courir
saw	sɔː	sawed	sɔːd	sawn	sɔːn	scier
say	seɪ	said	sed	said	sed	dire
see	siː	saw	sɔː	seen	siːn	voir
seek	siːk	sought	sɔːt	sought	sɔːt	chercher
sell	sel	sold	səʊld	sold	səʊld	vendre

à suivre…

Base verbale		Prétérit		Participe passé		Traduction
send	send	sent	sent	sent	sent	envoyer
set	set	set	set	set	set	mettre, configurer
sew	soʊ	sewed	soʊd	sewn	soʊn	coudre
shake	ʃeɪk	shook	ʃʊk	shaken	'ʃeɪkən	secouer, trembler
shear	ʃɪə	sheared	ʃɪəd	shorn	ʃɔːn	tondre (mouton)
shed	ʃed	shed	ʃed	shed	ʃed	verser, perdre, répandre
shine	ʃaɪn	shone	ʃɒn	shone	ʃɒn	briller
shit	ʃɪt	shat	ʃæt	shat	ʃæt	chier
shoe	ʃuː	shod	ʃɒd	shod	ʃɒd	ferrer (cheval)
shoot	ʃuːt	shot	ʃɒt	shot	ʃɒt	tirer
show	ʃəʊ	showed	ʃəʊd	shown	ʃəʊn	montrer
shrink	ʃrɪŋk	shrank	ʃræŋk	shrunk	ʃrʌŋk	rétrécir
shut	ʃʌt	shut	ʃʌt	shut	ʃʌt	fermer
sing	sɪŋ	sang	sæŋ	sung	sʌŋ	chanter
sink	sɪŋk	sank	sæŋk	sunk	sʌŋk	couler, sombrer
sit	sɪt	sat	sæt	sat	sæt	être assis
slay	sleɪ	slew	sluː	slain	sleɪn	tuer
sleep	sliːp	slept	slept	slept	slept	dormir
slide	slaɪd	slid	slɪd	slid	slɪd	glisser
sling	slɪŋ	slung	slʌŋ	slung	slʌŋ	lancer, jeter, suspendre
slink	slɪŋk	slunk	slʌŋk	slunk	slʌŋk	partir honteusement
slit	slɪt	slit	slɪt	slit	slɪt	fendre, inciser
smell	smel	smelt	smelt	smelt	smelt	sentir (odeur)
smite	smaɪt	smote	smaʊt	smitten	'smɪtən	frapper, châtier
sow	səʊ	sowed	səʊd	sown	səʊn	semer
speak	spiːk	spoke	spəʊk	spoken	'spəʊkən	parler
speed	spiːd	sped	sped	sped	sped	aller vite, précipiter
spell	spel	spelt	spelt	spelt	spelt	épeler
spend	spend	spent	spent	spent	spent	passer, dépenser
spill	spɪl	spilt	spɪlt	spilt	spɪlt	renverser, (se) répandre
spin	spɪn	spun	spʌn	spun	spʌn	tourner, tisser (toile)
spit	spɪt	spat	spæt	spat	spæt	cracher
split	splɪt	split	splɪt	split	splɪt	(se) fendre, (se) diviser
spoil	spɔɪl	spoilt	spɔɪlt	spoilt	spɔɪlt	gâcher, gâter
spotlight	'spɒtlaɪt	spotlit	spɒtlɪt	spotlit	'spɒtlɪt	diriger les projecteurs sur
spread	spred	spread	spred	spread	spred	étendre, étaler
spring	sprɪŋ	sprang	sprəŋ	sprung	sprʌŋ	bondir, provenir de
stand	stænd	stood	stʊd	stood	stʊd	être debout
steal	stiːl	stole	stəʊl	stolen	'stəʊlən	dérober, voler
stick	stɪk	stuck	stʌk	stuck	stʌk	coller, enfoncer
sting	stɪŋ	stung	stʌŋ	stung	stʌŋ	piquer, brûler
stink	stɪŋk	stank	stæŋk	stunk	stʌŋk	puer
strew	struː	strewed	struːd	strewn	struːn	éparpiller, joncher
stride	straɪd	strode	strəʊd	—	—	marcher à grands pas
strike	straɪk	struck	strʌk	struck	strʌk	frapper, sonner
string	strɪŋ	strung	strʌŋ	strung	strʌŋ	enfiler (perles)
strive	straɪv	strove	strəʊv	striven	'strɪvn	s'efforcer de
sublet	ˌsʌb'let	sublet	ˌsʌb'let	sublet	ˌsʌb'let	sous-louer
swear	sweə	swore	swɔː	sworn	swɔːn	jurer
sweep	swiːp	swept	swept	swept	swept	balayer
swell	swel	swelled	sweld	swollen	'swəʊlən	gonfler, enfler
swim	swɪm	swam	swæm	swum	swʌm	nager
swing	swɪŋ	swung	swʌŋ	swung	swʌŋ	(se) balancer
take	teɪk	took	tʊk	taken	'teɪkən	prendre
teach	tiːtʃ	taught	tɔːt	taught	tɔːt	enseigner
tear	teə	tore	tɔː	torn	tɔːn	(se) déchirer
tell	tel	told	təʊld	told	təʊld	raconter
think	θɪŋk	thought	θɔːt	thought	θɔːt	penser
thrive	θraɪv	throve	θrəʊv	thriven	'θrɪvn	se développer, s'épanouir
throw	θrəʊ	threw	θruː	thrown	θrəʊn	lancer

à suivre...

Base verbale		Prétérit		Participe passé		Traduction
thrust	θrʌst	thrust	θrʌst	thrust	θrʌst	pousser violemment
tread	trɛd	trod	trɒd	trodden	'trɒdn	marcher, parcourir
typecast	'taɪpkɑːst	typecast	'taɪpkɑːst	typecast	'taɪpkɑːst	enfermer dans un rôle
unbend	ˌʌn'bend	unbent	ˌʌn'bent	unbent	ˌʌn'bent	redresser, se détendre
underbid	ˌʌndə'bɪd	underbid	ˌʌndə'bɪd	underbid	ˌʌndə'bɪd	annoncer moins (prix)
undercut	ˌʌndə'kʌt	undercut	ˌʌndə'kʌt	undercut	ˌʌndə'kʌt	vendre moins cher
undergo	ˌʌndə'gəʊ	underwent	ˌʌndə'went	undergone	ˌʌndə'gɒn	subir, suivre
underlie	ˌʌndə'laɪ	underlay	ˌʌndə'leɪ	underlain	ˌʌndə'leɪn	sous-tendre
underpay	ˌʌndə'peɪ	underpaid	ˌʌndə'peɪd	underpaid	ˌʌndə'peɪd	sous-payer
undersell	ˌʌndə'sel	undersold	ˌʌndə'səʊld	undersold	ˌʌndə'səʊld	vendre moins cher
understand	ˌʌndə'stænd	understood	ˌʌndə'stʊd	understood	ˌʌndə'stʊd	comprendre
undertake	ˌʌndə'teɪk	undertook	ˌʌndə'tʊk	undertaken	ˌʌndə'teɪkən	entreprendre, assumer
underwrite	ˌʌndə'raɪt	underwrote	ˌʌndə'rəʊt	underwritten	ˌʌndə'rɪtn	réassurer, garantir
undo	ʌn'duː	undid	ʌn'dɪd	undone	ʌn'dʌn	défaire, annuler
unfreeze	ʌn'friːz	unfroze	ʌn'frəʊz	unfrozen	ʌn'frəʊzn	dégeler
unwind	ˌʌn'waɪnd	unwound	ˌʌn'waʊnd	unwound	ˌʌn'waʊnd	(se) détendre
uphold	ʌp'həʊld	upheld	ʌp'held	upheld	ʌp'held	soutenir, confirmer
upset	ʌp'set	upset	ʌp'set	upset	ʌp'set	renverser, contrarier
wake	weɪk	woke	wəʊk	woken	'wəʊkn	(se) réveiller
waylay	weɪ'leɪ	waylaid	weɪ'leɪd	waylaid	weɪ'leɪd	attaquer, assaillir
wear	weə	wore	wɔː	worn	wɔːn	porter (vêtement)
weave	wiːv	wove	wəʊv	woven	'wəʊvn	tisser, tresser
wed	wed	wed	wed	wed	wed	(se) marrier, épouser
weep	wiːp	wept	wept	wept	wept	pleurer
wet	wet	wet	wet	wet	wet	mouiller
win	wɪn	won	wʌn	won	wʌn	gagner
wind	waɪnd	wound	waʊnd	wound	waʊnd	serpenter, enrouler
withdraw	wɪð'drɔː	withdrew	wɪð'druː	withdrawn	wɪð'drɔːn	(se) retirer
withhold	wɪð'həʊld	withheld	wɪð'held	withheld	wɪð'held	retenir, différer
withstand	wɪð'stænd	withstood	wɪð'stʊd	withstood	wɪð'stʊd	résister à
wring	rɪŋ	wrung	rʌŋ	wrung	rʌŋ	tordre, essorer, arracher
write	raɪt	wrote	rəʊt	written	'rɪtn	écrire
		Fin de la liste				

PCEM 2

MEDICAL ENGLISH

DURATION: 90 MN

THE BERLIN PATIENT

1 Timothy Ray Brown was living in Berlin when, besides being HIV-positive, he had a relapse of leukemia. He was dying. In 2007, his doctor, Gero Huetter, made a radical suggestion: a bone marrow transplant using cells from a donor with a rare genetic mutation, known as CCR5 delta 32. Scientists had known for a few years that people with this gene mutation had proved resistant to HIV.

2 «We really didn't know when we started this project what would happen,» Huetter, an oncologist and haematologist who now works at the University of Heidelberg in southern Germany, told Reuters. The treatment could well have finished Brown off. Instead he remains the only human ever to be cured of AIDS. «He has no replicating virus and he isn't taking any medication. And he will now probably never have any problems with HIV,» says Huetter. Brown has since moved to San Francisco.

3 Most experts say it is inconceivable Brown's treatment could be a way of curing all patients. The procedure was expensive, complex and risky. To do this in others, exact match donors would have to be found in the tiny proportion of people–most of them of northern European descent–who have the mutation that makes them resistant to the virus. Dr Robert Gallo, of the Institute of Virology at the University of Maryland, puts it bluntly. «It's not practical and it can kill people,» he said last year. Sinoussi is more expansive. «It's clearly unrealistic to think that this medically heavy, extremely costly, barely reproducible approach could be replicated and scaled-up ... but from a scientist's point of view, it has shown at least that a cure is possible,» she says.

4 The International AIDS Society will this month formally add the aim of finding a cure to its HIV strategy of prevention, treatment and care. A group of scientist-activists is also launching a global working group to draw up a scientific plan of attack and persuade governments and research institutions to commit more funds. Money is starting to flow. The U.S. National Institutes of Health is asking for proposals for an $8.5 million collaborative research grant to search for a cure, and the Foundation for AIDS Research, or amfAR, has just announced its first round of four grants to research groups «to develop strategies for eradicating HIV infection.»

5 Until recently, people in HIV and AIDS circles feared that to direct funds toward the search for a cure risked detracting from the fight to get HIV-positive people treated. Even today, only just over five million of the 12 million or so people who need the drugs actually get them.

6 HIV first surfaced in 1981, when scientists at the U.S. Centers for Disease Control and Prevention discovered it was the cause of acquired immunodeficiency syndrome (AIDS). An article in the CDC's Morbidity and Mortality Weekly Report of that June referred to «five young men, all active homosexuals» from Los Angeles as the first documented cases. «That was the summer of '81. For the world it was the beginning of the era of HIV/AIDS, even though we didn't know it was HIV then,» says Anthony Fauci, director of the U.S. National Institute of Allergy and Infectious Diseases, who has made AIDS research his life's work.

7 In the subsequent three decades, the disease ignorantly branded «the gay plague» has become one of the most vicious pandemics in human history. Transmitted in semen, blood and breast milk, HIV has devastated poorer regions, particularly sub-Saharan Africa, where the vast majority of HIV-positive people live. As more tests and treatment have become available, the number of new infections has been falling. But for every two with HIV who get a chance to start on AIDS drugs, five more join the «newly infected» list. United Nations data show that despite an array of potential prevention measures–from male circumcision to sophisticated vaginal or anal microbicide gels–more than 7,100 new people catch the virus every day.

http://www.reuters.com/article/2011/06/01/us-aids-idUSTRE75030I20110601

I. COMPREHENSION: (10 MARKS)

A- TRUE OR FALSE? JUSTIFY OR CORRECT: (1 MARK)

1. People with CCR5 delta 32 are resistant to HIV. (T / F)

2. For every five HIV-positive people who are taking AIDS drugs, two new ones are infected. (T / F)

B- USE YOUR OWN WORDS TO SUM UP SOME EXPERTS' REACTION TO BROWN'S TREATMENT: (1 MARK)

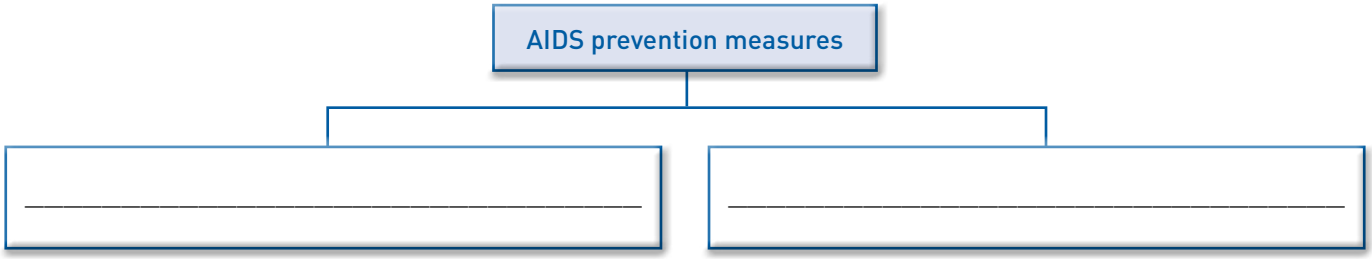
C- TICK THE BEST POSSIBILITY: (1 MARK)

1. ☐ IAS supplemented to its HIV strategy of prevention, treatment and care the target of finding a cure.
   ☐ amfAR introduced a scientific plan to convince the government to devote more money for AIDS treatment research.
2. ☐ The vast majority of those with HIV are active homosexuals.
   ☐ The greater number of those with HIV lives in poorer regions.

D - COMPLETE THIS TABLE: (1 MARK)

Source	Issue
Timothy Ray Brown's doctor Gero Huetter	
	referred to «five young men, all active homosexuals» from Los Angeles as the first documented cases

E COMPLETE THIS DIAGRAM FROM THE TEXT: (1 MARK)



F - WHAT DO THESE REFER TO? (2.5 MARKS)

them (§3): _____

8.5 (§4): _____

_____

five (§5): _____

_____

CDC (§6): _____

7,100 (§7): _____

G - VOCABULARY: (2.5 MARKS)

1. Find words that mean:

- killed (§2): _____
- striking arrangement (§7): _____
- microbes killer (§7): _____

2. Find the opposite of:

- easily(§3): _____
- reduced(§3): _____

3. Fill in the blanks with words from the indicated paragraphs:

- Persons with blood type AB have no antibodies and can receive any of the four types of blood; thus blood types O and AB are called universal(§3)_____and universal recipients, respectively.

- Plague has been known for at least 3,000 years. Epidemics have been recorded in China since 224 BC. The disease occurred in huge(§7)_____that destroyed the entire populations of cities throughout the Middle Ages; they have occurred sporadically since that time.

4. Find the English equivalent of:

rechute(§1): _____

moelle osseuse(§1): _____

sperme(§7): _____

II. LANGUAGE: (30 MARKS)

A- EXPRESS DIFFERENTLY AS INDICATED: (8 MARKS)

1- anesthetist / and / surgeon / task (individual possession)

2- Although her condition was critical, she was not allowed in the ER.

Despite

3- Electroconvulsive therapy seldom extended over weeks.

Seldom

4- Occasionally women go into labor before the expected date of birth, resulting in a premature infant.

5- The number and proportion of the different types of cells in the blood have been determined by a blood count. (active voice)

6- Each minute, cells carry out thousands of biochemical reactions and reproduce new cells that perpetuate life. (passive voice)

7- A centrifuge is used to compact the red blood cells in a blood sample in order to determine the percentage of the blood that consists of cells. (nouns formed from verbs)

8- The general structure of tissues has been studied for a long time. It is now well understood. (combine to get a non-restrictive relative clause)

B. PUT THE WORDS IN PARENTHESES IN THE CORRECT TENSE / FORM: (3 MARKS)

Because Rosemary had long suffered with asthma, she (to keep)_____certain medications at home, including terbutaline–one of several drugs I could prescribe for her that allow smooth muscle to relax, opening the airways. In fact, when she first awoke (to wheeze)_____, she had inhaled some terbutaline. But her continued gasps for (to breathe)_____made it clear that it (not – to do)_____the trick. So I began to give her more terbutaline through a nebulizer–a machine that (to aerosolize)_____ the drug, mixing it with a saltwater solution so it can get down the airways more easily. The nebulizer is about twice the size of your average lunch box, a distinct contrast to the (to inhale)_____she used at home, which was a tube barely larger than a lipstick.

C - FILL IN THE BLANKS WITH A RELATIVE PRONOUN: (1.5 MARKS)

Hospitals provide inpatient care_____they admit a patient for an overnight stay. Patients, _____ _____condition does not require an overnight hospital stay, receive outpatient care, _____ is generally covered by comprehensive policies.

D- USE THE WORDS PROVIDED TO MAKE COMPOUND ADJECTIVES: (2 MARKS)

Fibroblastic reticular cells form a firm but elastic matrix in which the (blood/form)_____cells reside, and are therefore rarely found in the bone marrow aspirate or cytological smear. When present, they are most likely to appear as dense cell groups with long (fiber/form)_____cytoplasmic processes and small nuclei.

Reticular histiocytes (not yet active in phagocytosis) are identical to phagocytic macrophages and are the main storage cells for (tissue/bind)_____iron. Because of their small nuclei and (easy/flow)_____ ____cytoplasm, they are noticeable after panoptic staining only when they contain obvious entities such as lipids or pigments.

E - EXPLAIN: (1.5 MARKS)

AIDS-free generation:

Toxin-producing genes:

Tick-borne disease:

F - CHOOSE THE RIGHT ALTERNATIVE: (3 MARKS)

1. o.n./a.c./o.d.	is a prescription indication meaning " before food"
2. b.i.d./q.i.d./t.i.d.	is a prescription indication meaning "twice a day"
3. teno/termo /tricho	is a prefix meaning "hair"
4. oopho/orchi/omphalo	is a prefix meaning "relating to the ovaries"
5. plegia/onco/osis	is a suffix meaning "diseased condition"
6. tachy/tomy/pexy	is a suffix meaning "surgical incision" or "cutting"

G - FILL IN THE BLANKS WITH WORDS FROM THE LIST: (3.5 MARKS)

/ cancer genomics / genomes / receptors / rearranging / immune genomics / cancer cells / sequencing /

Scientists are sequencing human genomes at a faster rate. Strictly speaking, however, each of us carries many different_____, rather than just one. Every time a cell divides, there's a small chance that it will make a mistake in copying its genes. The mutations that _____acquire, for example, are often crucial for their ability to spread and resist chemotherapy. Immune cell genomes change as well, but most of the time those changes keep us healthy rather than make us sick. By_____certain stretches of their DNA, immune cells can create new genes for antibodies and_____ The International Cancer Genome Consortium started up in April, with the goal of_____ 25,000 genomes from a wide range of cancers_____could allow doctors to select drugs with the best chances of killing a tumor_____ could let them survey the state of the immune system as it battles infections or as it learns to tolerate a transplanted organ.

H - GIVE A MEDICAL WORD OR EXPRESSION TO THE FOLLOWING DEFINITIONS: (3 MARKS)

1- _____: to try to make someone better.

2- _____: a device like a small light knife used for cutting or incising the body.

3- _____: is calculated by dividing the cardiac index by pulse rate.

4-_____: medicinal compound sold without prescription for the cure of disease or relief of symptoms.

5-_____: the average number of unfavorable recessive gene mutations per individual in a population.

6-_____: a method of measuring how much air a person can expel from their lungs.

I - MATCH THE FOLLOWING: (1.5 MARKS)

Variations in the size and shape of the red blood cell indicate the presence of

sickle-cell anemia	1 .	. a	if the cell is very large
pernicious anemia	2 .	. b	if the cell is very small
iron-deficiency anemia	3 .	. c	if the cell is half-moon shaped

J- AS IN THE EXAMPLE, MATCH THE WORDS IN A, B AND C TO MAKE CLUSTERS. WRITE THE ANSWERS IN D: (3 MARKS)

A	B	C	D
1. ~~bone~~	a. epithelial	i. content	1 + e + iv
2. longitudinal	b. adult	ii. area	2
3. blood	c. muscle	iii. unit	3
4. resting	d. hemoglobin	iv. ~~transplant~~	4
5. intensive	e. ~~marrow~~	v. pulse	5
6. stratified	f. care	vi. layer	6
7. body	g. surface	vii. tissue	7

III. TRANSLATION: (14 MARKS)

A - COMPLETE THE TABLE: (6 MARKS)

French	English
	clinical course
traitements suivis	
consultations externes	
	department
	~~laboratory medicine~~
	patient compliance
surveillance des traitements médicaux	
mode de début d'une douleur	
	des fourmillements
douleur à la décompression	
	a mild discomfort
insuffisance respiratoire	

B - TRANSLATE: (8 MARKS)

La fabrication, la différenciation et la maturation des lymphocytes s'effectuent pendant la vie embryonnaire et fœtale, dans les organes lymphoïdes centraux. Au niveau de la moelle osseuse sont produites des cellules souches, indifférenciées, dépourvues de caractères morphologiques et fonctionnels précis. Certaines d'entre elles migrent dans le thymus pour se transformer en lymphocytes T. D'autres restent dans la moelle pour devenir des lymphocytes B.

To determine overall heart function, doctors measure cardiac output, the amount of blood pumped by each ventricle in one minute. Cardiac output is equal to the heart rate multiplied by the stroke volume, the amount of blood pumped by a ventricle with each beat.