

**MARTHOMA RESIDENTIAL SCHOOL, THIRUVALLA  
FIRST MODEL EXAMINATION 2017-2018**

b2 ✓

**BIOLOGY  
STD X  
(Two hours)**

*Answers to this paper must be written on the paper separately.*

*You will not be allowed to write during the first 15 minutes.*

*This time is to be spent in reading the Question Paper.*

*The time given at the head of this Paper is the time allowed for writing the answers.*

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*Attempt all questions from Section I and Section II.*

*The intended marks for questions or parts of questions are given in brackets [ ].*

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**SECTION I (40 marks)**

**Attempt all questions from this section.**

**Question I**

**a. Name the following.**

- 1) An example for a hormone which shows positive feedback mechanism.
- 2) The type of immunity that exists in our body due to our genetic makeup.
- 3) The accessory gland in human males whose secretion neutralises acidic content in females' vagina.
- 4) The number of individuals inhabiting per unit area.
- 5) The lens of eye losing flexibility resulting in a kind of long-sightedness in middle aged people. [5]

**b. The statements given below are false. Rewrite the correct form of the statements by changing the word which is underlined.**

- 1) Myxoedema is caused due to the deficiency of adrenaline
- 2) Iodine is an example of a disinfectant.
- 3) CNG is mainly responsible for the formation of acid rain.
- 4) Beta cells of pancreas produce glucagon.
- 5) Corpus callosum is the part of the brain that carries impulses from one hemisphere of the cerebellum to the other. [5]

c. Differentiate between the following on the basis of what is given in brackets.

- 1) Sperm duct and fallopian tube. (function)
- 2) Red Cross and WHO. (one activity)
- 3) Demography and population density. (definition)
- 4) Cobalt chloride paper and parchment paper. (experiments in which they are used)
- 5) TAB vaccine and BCG vaccine. (nature of vaccine) [5]

d. Given below are sets with five terms. In each case, rewrite the terms in correct order so as to be in logical sequence.

1. Active immunity, Antigen, Antibody, Bacteria, Lymphocytes
2. Intestine, Liver, Intestinal artery, Hepatic vein, Hepatic portal vein
3. Uterus, parturition, fertilisation, gestation, implantation.
4. Endodermis, Root hair, Xylem, Soil water, Cells of Cortex.
5. Karyokinesis, S-phase, cytokinesis, G1-phase, G2 phase. [5]

e. Complete the following table by filling in the blank spaces numbered 1-5.

Structure	Function
Neutrophils	_____ (1) _____
_____ (2) _____	Produces testosterone
Chordae tendinae	_____ (3) _____
Corpus luetum	_____ (4) _____
_____ (5) _____	Filled with cell sap mostly in plants.

[5]

f. Given in the box below are a set of 14 biological terms. Of these, 12 can be paired into 6 matching pairs. Out of the six pairs, one has been done for you as an example.

Example: Endosmosis - Turgid cell.

Write out the remaining 5 matching pairs made by you as 1 to 5

Endosmosis, Cataract, Hypoglycemia, Hyaluronidase, Pigment, Turgid cell, Opaque cornea, Hyperglycemia, Mercurochrome, Opaque lens, Cushing's syndrome, Addison's disease, Acrosome, Urochrome.

[5]

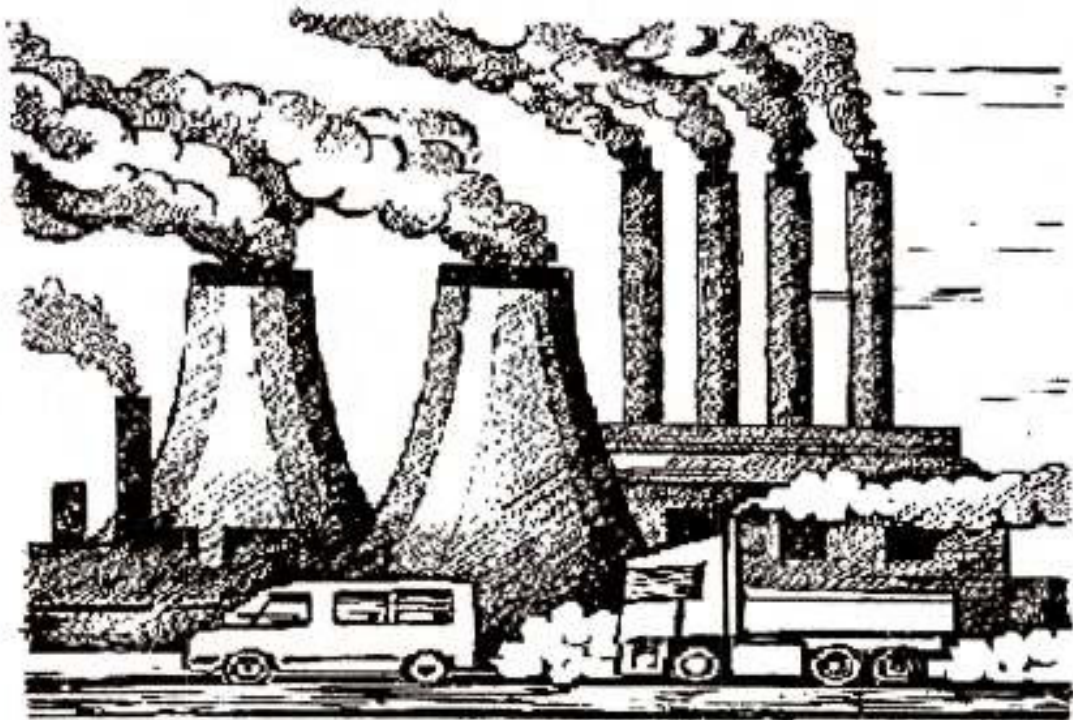


g. Explain briefly the health aids.

1. Penicillin.
2. Mouth to mouth resuscitation.
3. Vaccine.
4. Sulphonamide
5. Disinfectant

[5]

h. Study the diagram given below and answer the questions that follow:



- 1) Name the kind of pollution
- 2) List any common sources of this pollution.
- 3) Mention any harmful effects of pollution.
- 4) Name any two radiation pollutants.
- 5) Name any two fuels that abate air pollution.

[5]

**SECTION II (40 marks)**

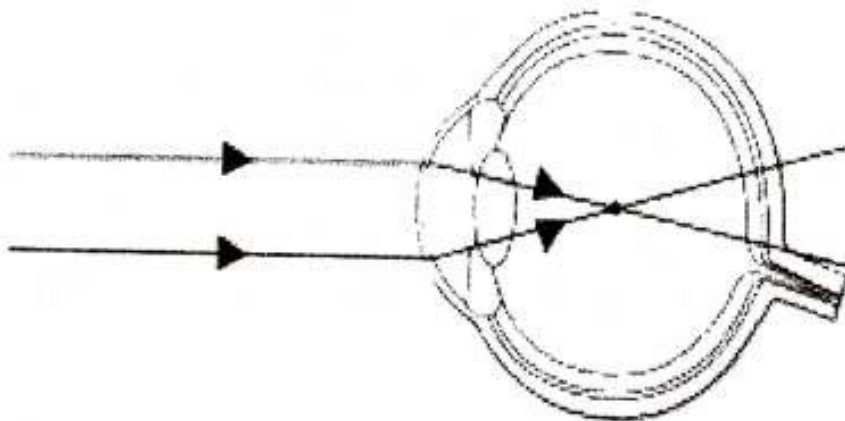
Attempt **all** questions from this section

**Question 2**

**a**

- 1) Draw a well labelled diagram of the membranous labyrinth found in the inner ear. [5]
- 2) Based on the diagram drawn above in (1) give a suitable term for each of the following descriptions:
  - a The sensory cells that helps in hearing.
  - b The part that is responsible for static balance of the body.
  - c The membrane covered opening that connects the middle ear to the inner ear.
  - d The fluid present in the middle chamber of cochlea.
  - e The structure that maintains the dynamic equilibrium of the body.

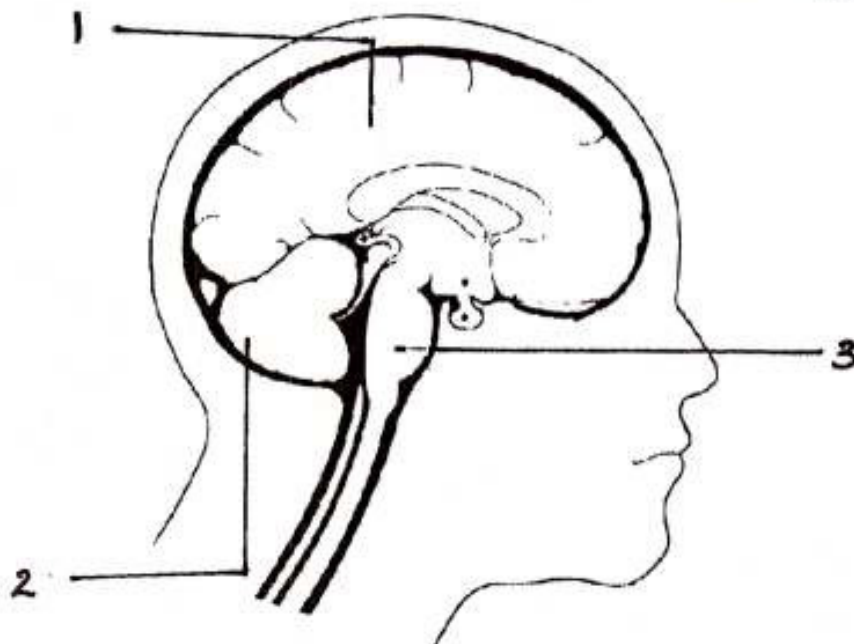
**b. Given below is a diagram depicting a defect of the human eye, study the same and then answer the questions that follow:**



- 1) Name the defect shown in the diagram.
- 2) What are the possible reasons that cause this defect?
- 3) Name the type of lens used to correct this defect.
- 4) With the help of a diagram show how the defect shown above is rectified using a suitable lens.

[5]

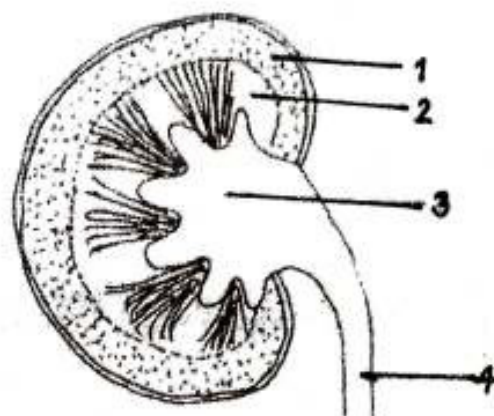
a. Study the diagram given below and answer the following questions:



- 1) Which organ controls the reflex action?
- 2) Label the parts numbered 1-3
- 3) Which are the two kinds of reflex actions?
- 4) Which part of the brain controls heart?
- 5) Which are the three layers of brain?

[5]

The figure given below shows the section of human kidney. Study the diagram and answer the questions that follow:



- 1) Label the parts numbered 1-4.
- 2) Why does part 2 has a striped appearance?
- 3) What is the fluid that passes down part 4? Name the main nitrogenous waste present in it.
- 4) Mention the two major steps involved in the formation of the fluid mentioned in Q 3 (b)3
- 5) Which part of the excretory unit in the kidneys is considered the dialysis bag?

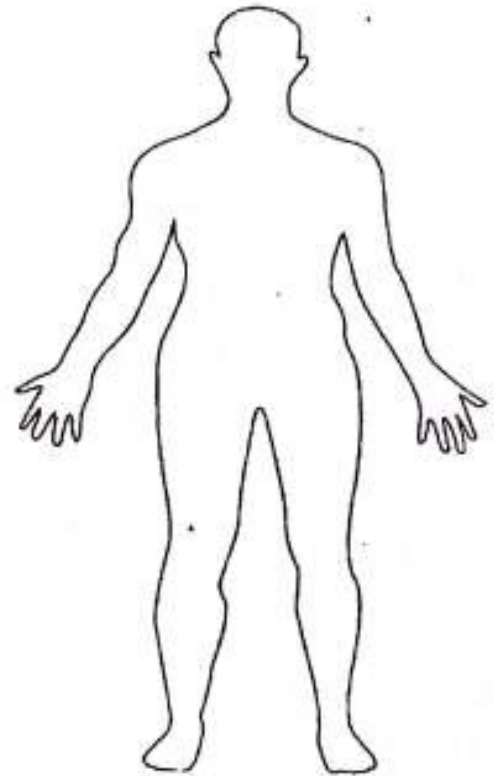
[5]



**Question 4**

a. Given below is the outline of the human body. Redraw the same and then place the following organs in their correct position and label them.

1)

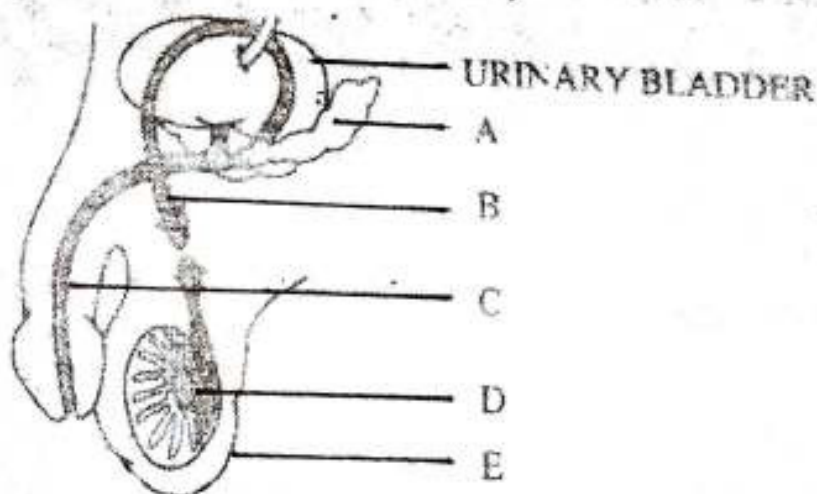


- a Thyroid glands.
- b Right and left kidney.
- c Adrenal glands
- d Pituitary gland
- e Pancreas.

- 2) Name the hormone produced by the thyroid gland and state its function in the body.
- 3) Name the hormones produced by pancreas.

[5]

b. The diagram below represents a surgical sterilisation method in males. Study the same and answer the following questions.

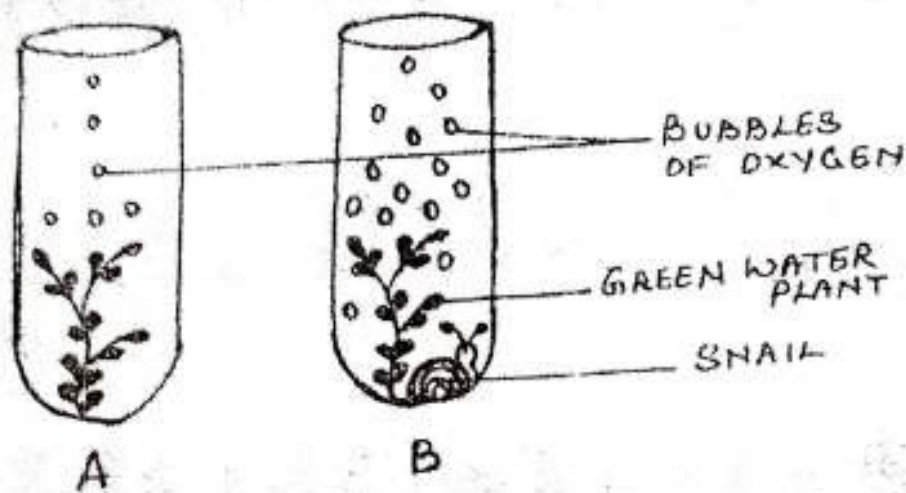


- 1) Name the parts marked A, B, C, D and E.
- 2) Give the name of the surgical method represented in the diagram.
- 3) Which part is ligated or cut?
- 4) Name the corresponding surgical method conducted on females.
- 5) Name the part which is ligated in females and why?

[5]

Question 5

a. The diagram given below shows two test-tubes A and B. Test-tube A contains a green water plant. Test-tube B contains both a green water plant and a snail. Both test-tubes are kept in sunlight. Answer the questions that follow:



- 1) Name the physiological process that releases the bubbles of oxygen.
- 2) Explain the physiological process as mentioned above in Q.5(a) (1)
- 3) What is the purpose of keeping a snail in test-tube 'B'?
- 4) Why does test-tube 'B' have more bubbles of oxygen?
- 5) Give an example of a water plant that can be used in the above experiment.
- 6) Write the overall chemical equation for the above process.

[5]

b. Give reason for the following:

- 1) Some women have facial hair like beard and moustache.
- 2) The hand automatically shows the direction to turn a cycle without thinking.
- 3) Glucose is not normally found in urine.
- 4) Any increase in WBC count is an indication of infection in human body.
- 5) It is difficult to go down the unknown stairs with one eye closed.

[5]