ICSE Board
Class IX Biology
Paper - 4

Time: 2 hrs **Total Marks: 80**

General Instructions:

1. *Answers to this paper must be written on the paper provided separately.*
2. *You will **not** be allowed to write during the first **15** minutes. This time is to be spent in reading the question paper.*
3. *The time given at the head of the paper is the time allotted for writing the answers.*
4. *Attempt **all** questions from **Section I** and **any four** questions from **Section II**.*
5. *The intended marks of questions or for parts of questions are given in brackets **[ ]**.*

SECTION-I (40 Marks)

Attempt **all** questions from this section.

Question 1

(a) Name the following:

(i) The connective tissue which connects muscles to bones.
(ii) The epithelial tissue present in glands like thyroid and pituitary gland.
(iii) The arrangement of flowers on a plant.
(iv) A non-dividing specialized tissue in plants.
(v) Another name for cell body of a neuron. [5]

(b) State whether the following statements are True or False:

(i) In mammals, the neck consists of eight vertebrae.
(ii) Fats are non-essential components of food.
(iii) Enzymes are pH sensitive.
(iv) Genes are present in the centrosome.
(v) All bacteria are useful to man. [5]

(c) Choose the odd one out:

(i) Pebbles, Broken bricks, Wood waste, Damaged mobile
(ii) Sternum, Rib, Cartilage, Femur
(iii) Vitamin K, Vitamin B1, Vitamin A, Vitamin D
(iv) Diabetes, Heart attack, Beri-beri, Small pox
(v) Trypsin, Amylopsin, Steapsin, Pepsin [5]

(d) Select the correct answer from the brackets and complete the following statements:

(i) Bilateral symmetry, triploblastic and true body cavity are the characteristic features of members of Phylum_____. (Platyhelminthes, Annelida)

(ii) Chlorenchyma is a modified _____ tissue. (parenchyma, collenchyma, sclerenchyma)

(iii) The _____ of the carpel bears ovules. (anther, ovary)

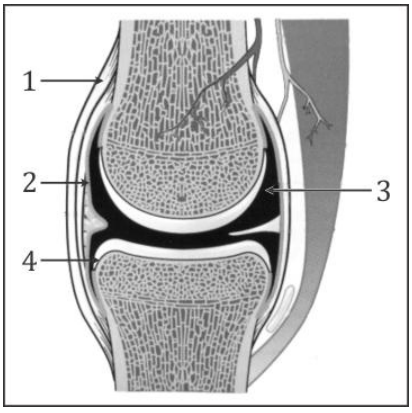
(iv) Ribosomes help in _____. (respiration, protein synthesis, secretion, cell division)

(v) _____ is a metabolic disorder. (Haemophilia, Goitre) [5]

(e) Match the following: [5]

Column A	Column B
(i) Ptyalin	Proteins
(ii) Trypsin	Fats
(iii) Lipase	Starch
(iv) Lactase	Sucrose
(v) Invertase	Lactose

(f) Study the given figure and answer the following questions:



1) Which type of joint is shown in the above figure?
2) Label parts 1, 2, 3, 4.
3) What is a ball and socket joint? [5]

(g) Substitute each phrase with a proper term: [5]

(i) Incubation period of polio virus is _____ days.

(ii) Eukaryotic organisms lacking a multicellular body design belong to Kingdom _____.

(iii)_____ relationship is mutually beneficial to both the partners.

(iv) The excretory organs of *Platyhelminthes* are_____.

(v) Roughage is made up of _____.

(h) Define the following terms:

(i) Anatomy

(ii) Cell

(iii) Vegetative propagation

(iv) Incubation period

(v) Ecosystem [5]

SECTION-II (40 Marks)

*Attempt any **four** questions from this section.*

Question 2 [10]

(a)

(i) What are the disadvantages of self-pollination?

(ii) Why is the fertilisation process in Angiosperms known as double fertilization?

(b)

(i) How do vaccines help in the prevention of a disease?

(ii) Name two serum compounds produced by genetically modified bacteria.

Question 3 [10]

(a)

(i) Why is it that new varieties of plants cannot be produced by vegetative propagation?

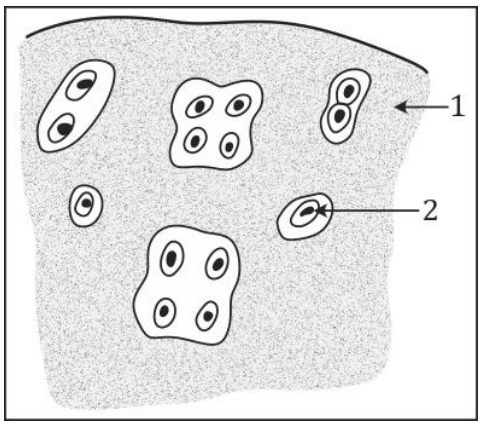
(ii) How is oxygen debt created in the body?

(b) Discuss the salient features of Phylum Protozoa**.**

Question 4 [10]

Study the given figure and answer the questions based on them.

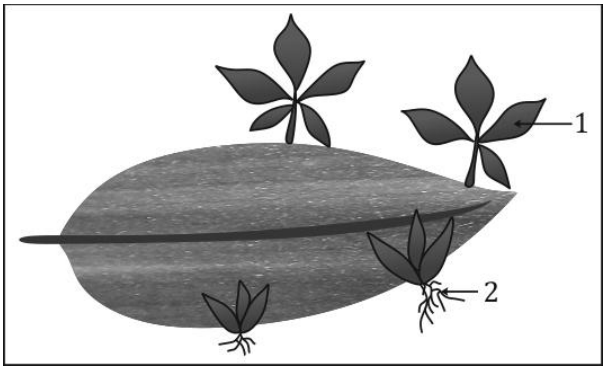
(i) The given figure shows a type of tissue.



1. Name the tissue.
2. Label parts 1 and 2.
3. State the characteristics of this tissue.

(ii) How does bulbil help in vegetative propagation?

(iii) The given figure shows a leaf that reproduces vegetatively.



1. Name the leaf.
2. Label parts 1 and 2.
3. How does reproduction take place in this leaf?

(iv) Is the micropyle important for a seed? Give reason.

Question 5 [10]

(a) Write the functions of:

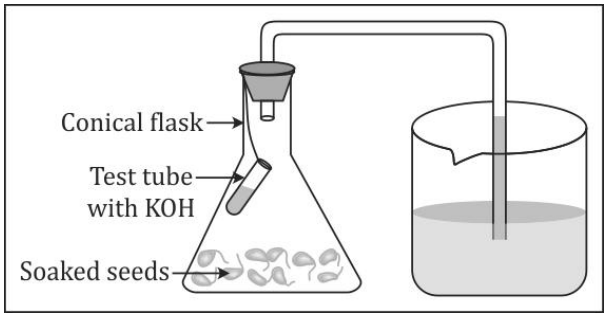
(i) Stigma
(ii) Chromosomes
(iii) Phloem
(iv) Sweat gland
(v) Roughage

(b)

(i) How do bacteria replenish nitrates in the soil? Why is the presence of nitrates an important factor for influencing soil fertility?
(ii) State three harmful effects of bacteria.
(iii) What is food preservation?

Question 6 [10]

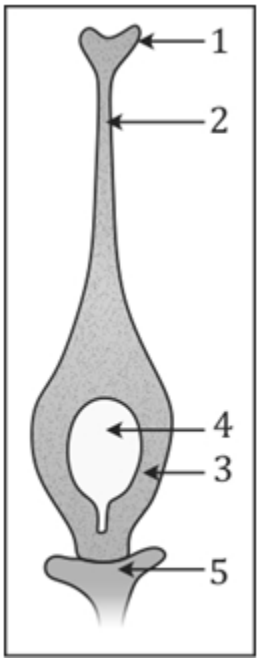
(a) The given figure represents an experimental set-up.



(i) What is the aim of the given experiment?
(ii) Why does water rise in the tube?
(iii) What is the purpose of KOH?
(iv) Is there any control for this experiment? If so, mention it.
(v) What precautions should be taken for this experiment?

(b)

(i) Study the given figure and answer the questions based on it.



1. Label parts 1-5.
2. Name the structure shown in the given figure.
3. Does this structure belong to androecium or gynoecium?

(ii) Name the bones present in the arm.

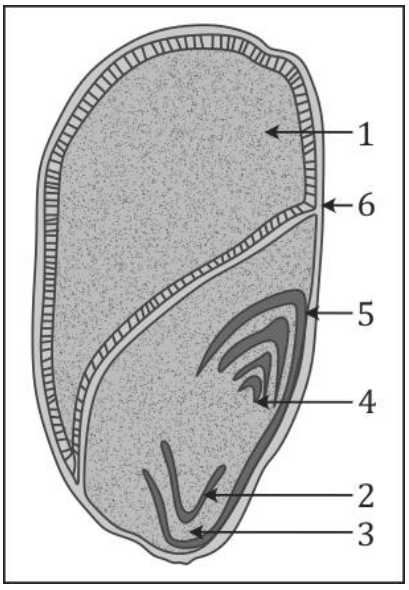
Question 7 [10]

(a)

(i) How are villi adapted for absorption?

(ii) State the role of fats.

(b) The given figure shows the structure of a seed.



(i) Name the seed.

(ii) Label parts 1-6.

(iii) What is the special feature of this seed?

(iv) Is it a monocot or a dicot seed? Give reason.