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SCIENCE (Theory) — Paper II
(Botany and Zoology)

Time Allowed : $2\frac{1}{2}$ Hours]

[Maximum Marks : 100

Instruction : Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.

PART - I**(BOTANY)**

(Marks : 50)

SECTION - AAnswer *all* the questions.

- I. A) Choose and write the correct answer : 5 × 1 = 5
1. Sunken stomata are seen in

a) Begonia	b) Grass
c) Nerium	d) Opuntia.
 2. Epinasty of leaves is caused by

a) Gibberellins	b) Ethylene
c) Cytokinin	d) Auxin.
 3. The term 'protoplasm' was coined by

a) Purkinje	b) Robert Brown
c) Robert Hooke	d) Schleiden.
 4. The world of living organism with layers of water, air and soil on the surface of the earth is called

a) Lithosphere	b) Atmosphere
c) Hydrosphere	d) Biosphere.
 5. Clove oil is used to relieve

a) toothache	b) headache
c) malaria	d) dysentery.

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B) Match the following :

5 × 1 = 5

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|----------------------|--------------------------|
| i) Endodermis | a) Shark and sucker fish |
| ii) Oxygen evolution | b) Maize |
| iii) Long-day plant | c) Lion and deer |
| iv) Cloning of gene | d) Starch sheath |
| v) Predation | e) Chrysanthemum |
| | f) Escherichia coli |
| | g) Photosynthesis. |

SECTION - B

II. Answer any ten of the following :

10 × 2 = 20

A) Differentiate between the following pairs (any two points only) :

1. Pericycle of dicot root and dicot stem.
2. Chloroplast and Mitochondria.
3. Food chain and Food web.

B) Give reasons for the following :

4. Caustic potash is used in respiration experiment.
5. Water reaches to a great height in trees like pine. How ?
6. Plants are considered to belong to first trophic level.

C) Give any two practical applications of the following :

7. Cobalt chloride and Vaseline.
8. Lysosomes.
9. Recombinant DNA technology.

D) Answer the following briefly :

10. Write any two general characteristics of stems.
11. Expand NADP.
12. What is a Vaccine ?

SECTION - C

III. Answer any four of the following :

4 × 5 = 20

13. Draw a neat labelled diagram of T.S. of dicot root.
14. Explain the mechanism of opening and closing of stomata.
15. Draw a neat labelled diagram of the structure of plant cell.
16. Explain the factors affecting respiration.
17. How would you prove by an experiment that carbon dioxide is needed for photosynthesis ?
18. Write a note on traditional method of prawn culture.
19. What are the ways by which water gets polluted ?

PART - II**(ZOOLOGY)**

(Marks : 50)

SECTION - A

Answer all the questions.

I. A) Choose and write the correct answers :

5 × 1 = 5

1. The units of compound eye of cockroach are called
 - a) villi
 - b) cerebelli
 - c) ommatidia
 - d) alveoli.
2. The enzyme renin acts on
 - a) fat
 - b) protein
 - c) carbohydrate
 - d) milk protein.
3. Acromegaly is due to
 - a) hyperpituitarism
 - b) hypopituitarism
 - c) hyperthyroidism
 - d) hypothyroidism.
4. The Vitamin essential for production of prothrombin is
 - a) Vitamin A
 - b) Vitamin D
 - c) Vitamin K
 - d) Vitamin E.
5. The study of population is called
 - a) Statistics
 - b) Demography
 - c) Geography
 - d) Ecology.

B) Match the following :

5 × 1 = 5

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|--------------------------|-------------------|
| i) Cutaneous respiration | a) Kidney |
| ii) Vitamin E | b) Neuron |
| iii) Nitrogenous waste | c) Hibernation |
| iv) Nodes of Ranvier | d) Aestivation |
| v) T-helper cells | e) Anti-sterility |
| | f) HIV |
| | g) Nephron. |

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SECTION - B

II. Answer any *ten* of the following :

10 × 2 = 20

A) Differentiate between the following pairs (any *two* points only) :

1. Conglobate gland and collateral gland.
2. RBC and WBC.
3. Natality and Mortality.

B) Give reasons for the following :

4. Frog is an amphibious form.
5. Why should food be well masticated ?
6. Vitamin A is called anti-xerophthalmic Vitamin.

C) Give the importance of the following (any *two* points only) :

7. T-Helper cells.
8. Thymus gland.
9. Vitamin D.

D) Answer the following briefly :

10. What is crura cerebri ?
11. What is a malpighian capsule ?
12. What is hermaphrodite ?

SECTION - C

III. Answer any *four* of the following :

4 × 5 = 20

13. Draw and neat labelled diagram of a leg of cockroach.
 14. Explain the male reproductive system of Frog.
 15. Draw a neat labelled diagram of L. S. of kidney of man.
 16. Explain how gaseous exchange takes place in human lungs.
 17. Describe the "Heart-attack" in man.
 18. Explain how long and short sightedness are caused and corrected.
 19. Give an account of water soluble vitamins.
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