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

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

[Maximum Marks : 100

PART - I**(BOTANY)**

(Marks : 50)

SECTION - AAnswer *all* the questions.

I. A) Choose and write the correct answer :

5 × 1 = 5

1. Lateral roots develop from
 - a) cortex
 - b) epidermis
 - c) xylem
 - d) pericycle.
2. Synthesis of Vitamin C is the function of
 - a) lysosomes
 - b) ribosomes
 - c) golgi bodies
 - d) microsomes.
3. Light reaction of photosynthesis results in the formation of
 - a) ATP
 - b) NADPH_2
 - c) Carbohydrate
 - d) both ATP and NADPH_2 .
4. Which of the following pollutants corrodes metals and damages buildings ?
 - a) Silica
 - b) CFC
 - c) Sulphur dioxide
 - d) Smog.
5. Quinine is extracted from
 - a) Cinchona
 - b) Rauwolfia
 - c) Eugenia
 - d) Ocimum.

[Turn over

B) Match the following :

5 × 1 = 5

- | | |
|------------------|------------------------|
| i) Paraplast | a) Aeroallergens |
| ii) Robert Brown | b) Cardamom |
| iii) Balsam | c) Protoplasm |
| iv) Hay fever | d) Ergastic substances |
| v) Flatulence | e) Nucleus |
| | f) Transpiration |
| | g) Ascent of sap. |

SECTION - B

II. Answer any *ten* of the following :

10 × 2 = 20

- A) Differentiate between the following pairs (any *two* points only) :
1. Palisade parenchyma and Spongy parenchyma.
 2. Prokaryotes and Eukaryotes.
 3. Mutualism and Parasitism.
- B) Give reasons for the following :
4. Conversion of sugar into alcohol.
 5. The roots are said to be positively geotropic and negatively phototropic.
 6. Silencers are used in two wheelers.
- C) Give any *two* practical applications of the following :
7. Parenchyma of stem.
 8. Endoplasmic reticulum.
 9. Raw silk.
- D) Answer the following briefly :
10. Name the materials that can easily pass through plasma membrane.
 11. Define Transpiration.
 12. Mention the two methods of prawn culture.

SECTION - C

III. Answer any *four* of the following :

4 × 5 = 20

13. Draw a neat labelled sketch of T.S. of Dicot leaf.
14. Give an experiment to prove that translocation of solutes takes place through the phloem.
15. Draw and label an experimental set-up to show that oxygen is evolved during photosynthesis.
16. Explain the structure of Mitochondrion.
17. Explain the role played by auxin in the field of agriculture and horticulture.
18. What is recombinant DNA technology ? Explain how it is used in the field of medicine.
19. Define noise pollution. List down the measures to check noise.

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SECTION - B

II. Answer any *ten* of the following :

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SECTION - C

III. Answer any *four* of the following :

4 × 5 = 20

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16. Explain the structure of Mitochondrion.
17. Explain the role played by auxin in the field of agriculture and horticulture.
18. What is recombinant DNA technology ? Explain how it is used in the field of medicine.
19. Define noise pollution. List down the measures to check noise.

PART - II**(ZOOLOGY)**

(Marks : 50)

SECTION - AAnswer *all* the questions.

I. A) Choose and write the correct answers :

5 × 1 = 5

1. In cockroach, the fenestrae help in detecting
 - a) temperature
 - b) light
 - c) chemical
 - d) food.
2. are body builders.
 - a) Carbohydrate
 - b) Fat
 - c) Protein
 - d) Lipid.
3. Which one of the following is a threshold substance ?
 - a) Urea
 - b) Sodium chloride
 - c) Ammonia
 - d) Creatinine.
4. Vitamin B_{12} deficiency causes
 - a) Pellagra
 - b) Beriberi
 - c) Pernicious anaemia
 - d) Night blindness.
5. Birth rate is known as
 - a) mortality
 - b) fecundity
 - c) demography
 - d) natality.

B) Match the following :

5 × 1 = 5

- | | |
|-----------------|------------------------|
| i) Nuptial pad | a) A. V. Node |
| ii) Pacemaker | b) Emergency hormone |
| iii) Adrenaline | c) Male frog |
| iv) Thiamine | d) STD |
| v) Syphilis | e) Sino-auricular node |
| | f) Vitamin B_1 |
| | g) Female frog. |

[Turn over

SECTION - BII. Answer any *ten* of the following :

10 × 2 = 20

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

1. Male cockroach and Female cockroach.
2. Arteries and Veins
3. Immigration and Emigration.

B) Give reasons for the following :

4. Presence of webbed toes in frog.
5. Carbohydrates are considered as fuel food.
6. The development of Rickets.

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

7. Bile.
8. Sterilization of surgical equipment.
9. Vitamin C.

D) Answer the following briefly :

10. What is haemolymph ?
11. What is micturition ?
12. What is fertilization ?

SECTION - CIII. Answer any *four* of the following :

4 × 5 = 20

13. Draw a neat labelled diagram of digestive system of frog.
 14. Describe the nervous system of cockroach.
 15. Explain the mechanism of respiration in man.
 16. Differentiate between RBC and WBC.
 17. Draw a neat labelled diagram of structure of Nephron.
 18. Explain the structure of spinal cord.
 19. Give an account of fat soluble vitamins.
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PART - II**(ZOOLOGY)**

(Marks : 50)

SECTION - A

Answer all the questions.

I. A) Choose and write the correct answers :

5 × 1 = 5

1. In cockroach, the fenestrae help in detecting
 - a) temperature
 - b) light
 - c) chemical
 - d) food.
2. are body builders.
 - a) Carbohydrate
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 - d) Night blindness.
5. Birth rate is known as
 - a) mortality
 - b) fecundity
 - c) demography
 - d) natality.

B) Match the following :

5 × 1 = 5

- | | |
|-----------------|------------------------|
| i) Nuptial pad | a) A. V. Node |
| ii) Pacemaker | b) Emergency hormone |
| iii) Adrenaline | c) Male frog |
| iv) Thiamine | d) STD |
| v) Syphilis | e) Sino-auricular node |
| | f) Vitamin B_1 |
| | g) Female frog. |

[Turn over

SECTION - B

II. Answer any *ten* of the following :

10 × 2 = 20

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

1. Male cockroach and Female cockroach.
2. Arteries and Veins
3. Immigration and Emigration.

B) Give reasons for the following :

4. Presence of webbed toes in frog.
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9. Vitamin C.

D) Answer the following briefly :

10. What is haemolymph ?
11. What is micturition ?
12. What is fertilization ?

SECTION - C

III. Answer any *four* of the following :

4 × 5 = 20

13. Draw a neat labelled diagram of digestive system of frog.
 14. Describe the nervous system of cockroach.
 15. Explain the mechanism of respiration in man.
 16. Differentiate between RBC and WBC.
 17. Draw a neat labelled diagram of structure of Nephron.
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