

5461

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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 - A

Answer all the questions.

I. A) Choose and write the correct answer :

$5 \times 1 = 5$

1. In prokaryotic cell the respiratory and photosynthetic enzymes are present in
 - a) cell wall
 - b) golgi bodies
 - c) plasma lemma
 - d) mitochondria.
2. Food chains are short with two or three links in the communities of
 - a) pond
 - b) land
 - c) air
 - d) ocean.
3. Diffusion pressure deficit in a leaf is caused by
 - a) root pressure
 - b) plasmolysis
 - c) osmosis
 - d) transpiration.
4. An environment pollutant present in artificial soil is
 - a) Silica
 - b) Naphthalene
 - c) Potassuim
 - d) Mica.
5. During the dark reaction CO_2 is absorbed by
 - a) PGAL
 - b) NADP
 - c) NADPH_2
 - d) RuDP.

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B) Match the following :

5 × 1 = 5

- | | |
|------------------------|-----------------------|
| i) Xylem capillarity | a) Cross breeding |
| ii) Vacuole | b) PAN |
| iii) Hybridization | c) Zymase |
| iv) Photochemical smog | d) Transpiration pull |
| v) Fermentation | e) Tonoplast |
| | f) Translocation |
| | g) Combustion. |

SECTION - B

II. Answer any *ten* of the following :

10 × 2 = 20

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

1. Herbicides and Pesticides.
2. Glycolysis and Krebs' cycle.
3. Dicot root and Dicot stem.

B) Give reasons for the following :

4. Green plants belong to the highest trophic level.
5. Plasma membrane is described as selectively permeable.
6. Salt is added in the preparation of pickles.

C) Give any *two* practical applications of the following :

7. Recombinant DNA technology.
8. Endoplasmic reticulum.
9. Sunken stomata of Nerium and spines of Opuntia.

D) Answer the following briefly :

10. What are the important features of the cell theory ?
11. Give a short note on veins of a leaf.
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. Draw and label the parts of Mitochondria.
15. Discuss the causes for water pollution.
16. Explain the economic importance of silk. How can the sericulture programme be improved ?
17. Explain the importance of gibberellin in plant growth.
18. Bring out the different methods of reducing transpiration.
19. Describe 'Light Reaction' of photosynthesis.

PART - II**(ZOOLOGY)**

(Marks : 50)

SECTION - A

Answer all the questions.

I. A) Choose and write the correct answers : $5 \times 1 = 5$

1. With the help of fenestrae, cockroach detects differences in
 - a) texture
 - b) temperature
 - c) food
 - d) smell.
2. The hormone secreted by the corpus luteum is
 - a) oxytocin
 - b) vasopressin
 - c) parathormone
 - d) progesterone.
3. The eye is kept moist and free from dust due to the secretion of
 - a) salivary gland
 - b) Cowper's gland
 - c) conglobate gland
 - d) lachrymal gland.
4. Vitamin C is rich in
 - a) Liver
 - b) Legumes
 - c) Milk
 - d) Citrus fruits.
5. Gametes are produced in
 - a) Testes
 - b) Cysts
 - c) Ovary
 - d) Gonads.

B) Match the following :

 $5 \times 1 = 5$

- | | |
|----------------------|-----------------------|
| i) Compound eye | a) Vitamin E |
| ii) Pleural membrane | b) Centre of immunity |
| iii) Skin | c) Absorption |
| iv) Thymus | d) Lungs |
| v) Lacteal | e) Ommatidium |
| | f) Vitamin D |
| | g) Excretion. |

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

10 × 2 = 20

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

1. Cutaneous respiration and Buccal respiration.
2. Diabetes insipidus and Diabetes mellitus.
3. Corpus luteum and Corpus callosum.

B) Give reasons for the following :

4. Eggs of frog are coated with jelly.
5. Vitamin K is called as anti-haemorrhagic vitamin.
6. Alveoli are lined by a thin film of moisture.

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

7. Refraction media of the eye.
8. Proper screening of blood.
9. Calciferol.

D) Answer the following briefly :

10. Write a short note on gizzard.
11. What is ultra-filtration ?
12. What are the changes that are observed in the second trimester of gestation period ?

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

4 × 5 = 20

13. Draw the structure of digestive system of frog and mark its parts.
 14. Draw and label the structure of eye of man.
 15. Describe the female reproductive system of cockroach.
 16. Describe the mechanisms of respiration in man.
 17. Describe the structure of nephron.
 18. Write briefly the role of pancreas and liver in the digestion of food of man.
 19. Discuss on the importance of fat-soluble vitamins in our daily life.
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