

ESKPXII-XXVI (I)
BIOLOGY PART-II

Time: 2 Hours 40 Minutes

SECTION "B"

Marks: 40

Q.2. Give short answers to any TEN (10) questions. All questions carry equal marks.

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| i. | Briefly describe treatment of Otitis Media. List any four symptoms related to the disease. | 3+1 |
| ii. | Define collecting ducts. Describe the process of tubular secretion. | 1+3 |
| iii. | What does the term fracture refer to? How does a fracture occur? Differentiate between three types of bone fractures. | 0.5+0.5+3 |
| iv. | Give a brief description of both symptoms and treatment of brain tumor. | 2+2 |
| v. | Define hyperglycemia and how does it lead to glycosuria? Describe three cardinal signs of diabetes mellitus. | 1+3 |
| vi. | What is a dominance hierarchy (pecking order)? List three advantages of having a dominance hierarchy within a group. | 1+3 |
| vii. | Define spermiogenesis. Describe the structure of a mature sperm, including the head, neck, midpiece, and tail. Give the function of the acrosome. | 1+2+1 |
| viii. | If a female is a carrier for an X-linked recessive disorder, what is the chance that any of her offspring will inherit the mutation? Explain the pattern of inheritance for both female and male children of an affected father. | 1+3 |
| ix. | Compare any four aspects of Klinefelter's syndrome and Turner's syndrome. | 1+1+1+1 |
| x. | Describe the principle formulated by Haeckel? List any four types of biochemical similarities shared by all living organisms as evidences of evolution. | 2+2 |
| xi. | Describe the process of formation of acid rain. List any four serious environmental consequences of acid rain. | 2+2 |
| xii. | Describe the scope of biotechnology in any four areas. | 1+1+1+1 |
| xiii. | Differentiate between toxoid vaccines and viral vector vaccines. Give an example of each. | 1.5+1.5+1 |

SECTION "C"

Marks: 27

Note: Attempt any THREE (03) questions from the following. Each question carries equal marks.

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| Q.3. | a) Explain the structure of bronchi and bronchioles by highlighting at least five characteristics of each. | 2.5+2.5 |
| | b) Define osmoregulation. Describe osmoregulation in terrestrial animals especially referring to anhydrobiosis. Give an example. | 1+2.5+0.5 |
| Q.4. | a) Differentiate between pelvic girdle and pectoral girdle. | 2.5+2.5 |
| | b) Define operant response, reinforcement and reward. Illustrate instrumental learning through an example. | 1.5+2.5 |
| Q.5. | a) State any six descriptions and any four functions of spinal cord. | 3+2 |
| | b) Define aging. List any six symptoms of aging. | 1+3 |
| Q.6. | a) Recall four components of PCR. Describe denaturation, primer annealing and polymerization as steps of PCR-amplification cycle. | 2+3 |
| | b) Describe XO-XX pattern of sex determination. Give two examples of organisms in which it occurs. | 1.5+1.5+1 |