

ESKPXI-XXVI (I)
BIOLOGY PART-I

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 nucleolus and nuclear membrane. State two reasons why nucleus is regarded as an important organelle? | 1.5+1.5+1 |
| ii. Write any four characteristics of lipids. Describe the structure of triglyceride. | 2+2 |
| iii. Describe the effect of low temperature and high temperature on enzyme activity and explain the molecular reasons behind both effects. List any two organisms whose enzymes work at extreme temperature. | 1.5+1.5+1 |
| iv. Define photosystem. Outline the structure, types and role of photosystems and state why light reaction is called light dependent reaction? | 1+1+0.5+0.5+1 |
| v. Briefly describe herpes simplex virus. Distinguish HSV1 from HSV2. | 2+1+1 |
| vi. Describe the causative agent, transmission, symptoms, and treatment of cholera. Also explain the role of ORS and preventive measures taken against the disease. | 1+1+0.5+1.5+1 |
| vii. Describe the structure, formation, and functions of the plasmodium in plasmodial slime molds. | 2+1+1 |
| viii. What do gymnosperms mean? List their seed type, plant body form, root system, number of cotyledons, ovules and leaf structure. | 1+3 |
| ix. Compare the body organization and skeletal structures of sponges (Porifera) and cnidarians (Coelenterata), highlighting how they differ in terms of tissue organization. | 2+2 |
| x. What does the word auxin mean? State the composition of auxin. Where is it produced in a plant? How does it primarily move? Explain its main role in shoot growth. | 0.5+1+0.5+0.5+1.5 |
| xi. Describe the defense mechanism of stomach against hydrochloric acid and pepsin? State how does H.pylori overcome these defenses. | 2+2 |
| xii. Distinguish between essential (primary) hypertension and secondary hypertension. Provide examples of conditions that may lead to secondary hypertension. What are the major health risks associated with persistent hypertension? | 1+1+1+1 |
| xiii. Define antibodies. Distinguish between the variable region and constant region of an antibody. What is the function of each region? Classify antibodies into different types. | 1+1+1+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) Define proteins and describe their composition. Explain the importance of proteins in living organisms. | 1+1+3 |
| | b) Elaborate the statements, "mitochondria are self-replicating organelles," and "mitochondria are power houses" by providing evidence from their structure and composition. | 2+2 |
| Q.4. | a) What is bacterial leaf spot disease? List its causative agents, symptoms, mode of spread and control. | 1+1+1+1+1 |
| | b) Briefly describe enzyme nomenclature. Describe oxidoreductases, transferases and hydrolases with examples. | 1+3 |
| Q.5. | a) Explain the evolutionary significance of the name "Amphibia" and describe the theory of their origin from lobe-finned fish. List two key adaptations that allowed amphibians to survive on land. | 1+2+2 |
| | b) Describe the preparatory phase of glycolysis in four steps. | 1+1+1+1 |
| Q.6. | a) Explain phototropism and geotropism by stating their stimulus, mechanism, examples and importance. | 2.5+2.5 |
| | b) Define lymphatic system and state its role. Describe the discovery and naming of the given system. | 1+1+2 |