



BIOLOGY

Class 12 - Biology

Time Allowed: 3 hours

Maximum Marks: 70

General Instructions:

The question paper is divided into **four sections**:

1. Section A

- Q. No. 1 contains **Ten multiple choice type** of questions carrying **One mark** each.
- Q. No. 2 contains **Eight very short answer type** of questions carrying **One mark** each.

2. Section B

- Q. No. 3 to Q. No. 14 contain **Twelve short answer type** of questions carrying **Two marks** each. (Attempt any Eight).

3. Section C

- Q. No. 15 to Q. No. 26 contain **Twelve short answer type** of questions carrying **Three marks** each. (Attempt any Eight).

4. Section D

- Q. No. 27 to Q. No. 31 contain **Five long answer type** of questions carrying **Four marks** each. (Attempt any Three).

5. Figures to the right indicate full marks.

6. For each MCQ, correct answer must be written along with its alphabet. e.g., (a).... / (b) / (c)..... / (d)..... Only first attempt will be considered for evaluation.

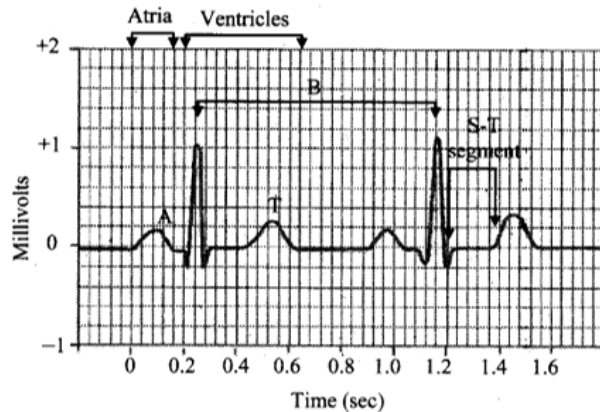
Section A

1. **Select and write the correct answer:** **[10]**
- (a) If members of two populations have difference in the structure of reproductive organs, then this type of isolation is called _____. **[1]**
- a) seasonal b) habitat
- c) mechanical d) ethological
- (b) Identify the growth hormone in plants which causes inhibitory effect. **[1]**
- a) Cytokinins b) Ethylene
- c) Abscisic acid d) Gibberellin
- (c) Recognition sequence of restriction enzymes are generally _____ nucleotides long. **[1]**
- a) 14 to 18 b) 4 to 8

3. **Answer the following:** [2]
 (a) What is test cross? [1]
 (b) Give one example each of [1]
 i. Autosomal dominant traits
 ii. Autosomal recessive traits

4. Give the importance of fossils in support of organic evolution. [2]

5. Identify A and B in the given diagram and explain T wave. [2]



6. What is lac? Enlist economic importance of lac. [2]

7. i. What is a connecting link? [2]

ii. Which fossil animal is considered as the connecting link between reptiles and birds? Give any one character of each class found in it.

8. **Answer the following:** [2]

(a) Define endangered species. [1]

(b) Define **greenhouse effect**. [1]

9. How **melt in mouth** vaccines are administered? Mention any two benefits of the same. [2]

10. Give practical applications of Cytokinins. [2]

11. Global warming is caused by **greenhouse effect**. Justify. [2]

12. Give the role/function of hormones released by neurohypophysis. [2]

13. Give significance of Transpiration. [2]

14. Enlist the histones which form an octamer of nucleosome. [2]

Section C

Attempt any 8 questions

15. Enlist the characteristics of Neanderthal Man. [3]

16. **Answer the following:** [3]

(a) What is microsporogenesis? [1]

(b) Give the floral adaptations of entomophily. [2]

17. i. Give reason - Water acts as thermal buffer. [3]

ii. Draw a neat and proportionate diagram of root hair and label mitochondria, nucleus and vacuole.

18. Give the adverse effects of opioids, cannabinoids and morphines on human health. [3]

19. **Answer the following:** [3]

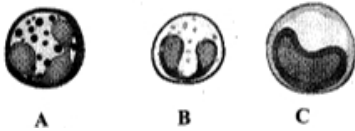
(a) Explain the term Emigration. [1]

(b) Name the interaction in: [2]

i. Lichen

ii. A protozoan living in the digestive tract of a flea living on a dog.

20. Give advantages of single cell protein (SCP). [3]
21. Describe physiological effect and applications of gaseous hormone in plants. [3]
22. Satish is a colorblind boy. His mother has normal vision but his maternal grandfather is colourblind. His father and maternal grandmother have normal vision. Explain the pattern of inheritance with a suitable chart. [3]
23. Describe nervous system in Planaria with well labelled diagram. [3]
24. **Answer the following:** [3]
- (a) What is Anticodon? [1]
- (b) The process of transcription takes place on a part of DNA molecule known as transcription unit. Draw a well labelled diagram of the same showing different regions of the unit. [2]

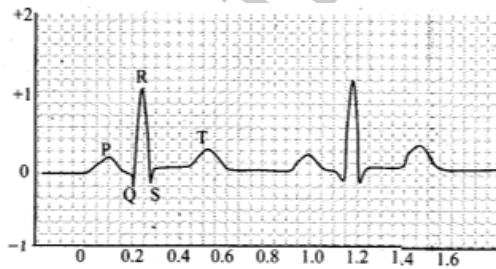


25. Identify A, B and C from the above diagrams and give their functions. [3]
26. Describe the structure of human sperm. [3]

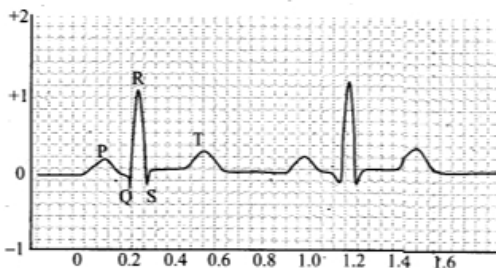
Section D

Attempt any 3 questions

27. **Answer the following:** [4]
- (a) Name the region of retina where rods and cones are absent. [1]
- (b) Describe the role of Calcitonin. [2]
- (c) Give names of cranial nerves VI and VII. [1]
28. Describe the changes involved during gastrulation. [4]
29. **Answer the following:** [4]
- (a) Name the valve between left atrium and left ventricle and give its significance. [2]
- (b) In the electrocardiogram shown below, which wave represents ventricular diastole. [1]



- (c) In electrocardiogram, QRS complex stands for: [1]



30. Explain any three examples of biopiracy. [4]
31. Differentiate between anemophily and entomophily. [4]