



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) Vermiform appendix is an example of _____ organ.

[1]

a) sense

b) vestigial

c) analogous

d) homologous

(b) Which of the following is the only gaseous plant growth regulator?

[1]

a) ABA

b) Ethylene

c) Cytokinin

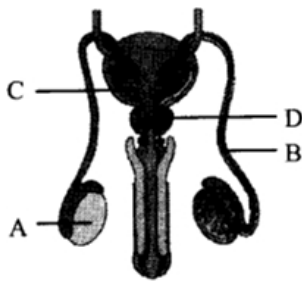
d) Gibberellin

(c) _____ is a soil bacterium which causes crown gall tumours in dicotyledonous plants.

[1]

a) Escherichia coli

b) Bacillus thuringiensis



- (h) Which is the process that removes introns from RNA? [1]

Section B

Attempt any 8 questions

3. **Answer the following:** [2]
 (a) Mention the chromosome number having the mutated gene for β -Thalassemia. [1]
 (b) If a carrier woman marries a colorblind man, what will be the phenotype of their progeny? Show in the form of a chart. [1]
4. Define the terms: [2]
 i. Genetic drift
 ii. Homologous organs
5. Sketch and label T.S. of human artery. [2]
6. What are the requirements of dairy management? Give one example of each Indian and exotic breed of cow. [2]
7. Give the importance of fossils in support of organic evolution. [2]
8. **Answer the following:** [2]
 (a) Define global warming. [1]
 (b) Which device is used to clean both dust and gases from polluted air? [1]
9. What is palindrome in DNA? [2]
10. Abscissic acid is the common name given to two identical substances isolated separately. Name them. Give the chemical features of abscissic acid. [2]
11. What are the causes of deforestation? [2]
12. Enlist any four motor cranial nerves. [2]
13. i. Define - Imbibition [2]
 ii. Explain how imbibition helps root hairs in adsorption of water.
14. Describe the Wobble hypothesis. [2]

Section C

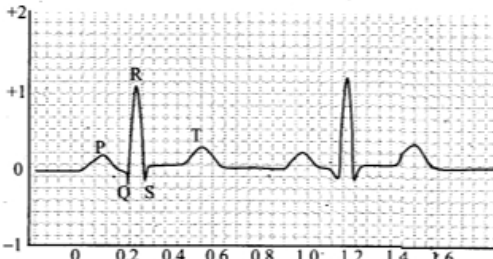
Attempt any 8 questions

15. Enlist the characteristics of Neanderthal Man. [3]
16. **Answer the following:** [3]
 (a) Explain following term: Apomixis [1]
 (b) Sketch and label T.S. of anther. [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. Describe the antigen-antibody complex. [3]
19. **Answer the following:** [3]
 (a) Explain the term Emigration. [1]
 (b) From the given diagram, identify the type of population growth curve: [2]

20. i. What is composition of bio-gas? [3]
 ii. Mention any four benefits of bio-gas.
21. Describe physiological effect and applications of gaseous hormone in plants. [3]
22. Explain incomplete dominance with an example. [3]
23. Draw a neat diagram of thyroid gland and label thyroid follicle, follicular cells and blood capillaries. [3]
24. **Answer the following:** [3]
- (a) Arrange the following steps of DNA fingerprinting in correct sequence: [1]
- Gel electrophoresis
 - Isolation of DNA
 - Southern blotting
 - Restriction digestion
- (b) Draw a labelled diagram showing the mechanism of DNA replication. [2]
25. Give reasons: [3]
- Lymphatic vessels are milky in appearance.
 - Monocytes are called scavengers.
 - The wall of left ventricle is thicker than right ventricle.
 - Valves are present in the veins.
 - Pulmonary veins carry oxygenated blood.
26. Describe the structure of human sperm. [3]

Section D

Attempt any 3 questions

27. **Answer the following:** [4]
- State the other name for Dentist's nerve. [1]
 - Enlist the number and names of motor cranial nerves in human being. [2]
 - Give the name of endocrine gland which is prominent at birth but gets gradually atrophied in adult stage. [1]
28. With the help of a neat, labelled diagram, describe the human male reproductive system. [4]
29. **Answer the following:** [4]
- (a) Differentiate between open and closed circulation with reference to: [2]
- blood pressure
 - exchange of material
- (b) In electrocardiogram, QRS complex stands for: [1]
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- (c) In human pharynx, there is a set of lymphoid organs called _____. [1]
30. With the help of a neat and labelled diagram, describe steps in recombinant DNA technology. [4]
31. Explain outbreeding devices in angiospermic plants. [4]