

CBSE Board
Class XII Biology
Sample Paper – 1

Time: 3 Hours**Total Marks: 70**

General Instructions:

1. All questions are compulsory.
 2. This question paper consists of four Sections A, B C and D. Section **A** contains **8** questions of **one** mark each, Section **B** is of **10** questions of **two** marks each, Section **C** is of **9** questions of **three** marks each, and Section **D** is of **3** questions of **five** marks each.
 3. There is no overall choice. However an internal choice has been provided in **one** question of **2** marks, **one** question of **3** marks and all the **three** questions of **5** marks weight age. A student has to attempt only one of the alternatives in such questions.
 4. Wherever necessary, the diagrams drawn should be neat and properly labelled.
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Section A

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| Q.1. How is Bryophyllum cultivated? | [1] |
| Q.2. Amongst Opuntia spines, lemon thorns, rose prickles and gourd tendrils, which ones are homologous organs and why? | [1] |
| Q.3. State the function of pyrogens. | [1] |
| Q.4. Name two cloning vectors. | [1] |
| Q.5. What is palindromic nucleotide sequence? | [1] |
| Q.6. Give one important use of GMO. | [1] |
| Q.7. When does sigmoid growth curve obtained? | [1] |
| Q.8. Define ecological niche. | [1] |

Section B

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| Q.9. What is terror of Bengal? | [2] |
| Q.10. What will be the genotypes of the parents if the offspring had phenotypes in the following proportion? (a) 9:3:3:1 (b) 1:1:1:1 (Use the symbols Aa and Bb). | [2] |
| Q.11. If the base sequence of one strand of DNA is CAT, TAG, TAC, GAC, what will be the base sequence (a) Of complementary DNA strand (b) Of its complementary RNA strand. | [2] |

- Q.12. What is Southern blotting? Give one example where it is applied. [2]
- Q.13. How are restriction enzymes different from topoisomerases functionally? [2]
- Q.14. *Bacillus thuringiensis* produce insecticidal protein. Why does this toxin not kill the *Bacillus*? [2]
- Q.15. Differentiate between grazing food chain and detritus food chain. [2]
- Q.16. Pesticides applied to the crop plants and industrial chemicals released into the water bodies are transmitting potential harm to both humans as well as other animals. Do you agree with the statement? Give at least two reasons to support your answer. [2]
- Q.17. Why do mosses and lichens generally form the pioneer species for ecological succession on a bare rock? [2]
- Q.18. Name the infective stage of Plasmodium. Give any two symptoms of the disease caused by this pathogen. [2]

Or

RNA is the first genetic material. Highlight some of the facts and points about RNA.

Section C

- Q.19. Write a short note on gamete transfer in plants. [3]
- Q.20. Differentiate between spermatocytes and oocytes. [3]
- Q.21. [3]
- (a) Excess use of pesticides results in the development of more harmful pests rather than causing complete wipeout of pest. Why?
- (b) What is this phenomena called?
- (c) What conclusion can you draw about the directionality of evolution based on this observation?
- Q.22. During his studies on genes in *Drosophila* that were sex-linked T.H. Morgan found that F_2 - population phenotypic ratios deviated from expected 9:3:3:1. Explain the conclusion he arrived at? [3]
- Q.23. List some symptoms of drug addicts. [3]
- Q.24. What is the significance of SCP? [3]
- Q.25. What are sticky ends? Why are they named so? [3]
- Q.26. Explain by taking an example that plants and animals are interdependent upon each other for reproduction. [3]
- Q.27. Explain the differences between the seral stage and the climax community during succession. [3]

Or

Describe various techniques used in control of gaseous pollutants.

Section D

Q.28. Describe briefly the structure of monocotyledonous albuminous (maize) seed. [5]

Or

Describe briefly the structure of human ovum.

Q.29. What will happen: [5]

- (i) When complete sets of chromosomes are added to diploid genome?
- (ii) When individual chromosomes are added to or deleted from the diploid genome?
- (iii) When a part of the chromosome is lost?
- (iv) When a part of chromosome breaks and attaches to another non-homologous chromosome?
- (v) When a part of the chromosome breaks and attaches to its homologue?

Or

Describe in brief the structure of transfer RNA.

Q.30. Ram is managing a dairy firm. He has been advised to use artificial insemination to overcome several problems in developing better breeds of cow. Govind has advised him MOET for herd improvement. Ram is ignorant and is not able to decide. How will you help Ram regarding [5]

- (i) Which technique should he adopt?
- (ii) Procedure of new technique
- (iii) What is advantage of this technique?
- (iv) What values are reflected in it?