

CBSE Board
Class XII Biology
Sample Paper – 3

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 labeled.
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Section A

- Q.1. What is the relationship between number of chromosomes in meiocyte and gametes? [1]
- Q.2. What is the function of restriction enzyme in DNA fingerprinting? [1]
- Q.3. Why is whisky more intoxicating than beer? [1]
- Q.4. What is microinjection? [1]
- Q.5. Name the pathogen that transform normal plant cell into a tumor. [1]
- Q.6. What is the function of ADA? [1]
- Q.7. If a marine fish is placed in a fresh water aquarium, will the fish be able to survive? Why or why not? [1]
- Q.8. What does BOD indicate? [1]

Section B

- Q.9. What is the significance of sporopollenin? [2]
- Q.10. Among the following genotypes: [2]
AA, I^AI^B, aa, Bb, I^Bi, Aa, rr, BB, ii
(i) Which ones are heterozygous and which are homozygous?
(ii) Which of the genotypes have the same phenotypes (the capital letter stands for dominance).

- Q.11. In a cross between a tall pea plant with yellow seeds (DdYy) and a tall plant with green seeds (Ddyy), what proportion of the offsprings could be expected to be: [2]
(a) Tall and green; (b) Dwarf and green?
- Q.12. How is the DNA better genetic material than RNA? [2]
- Q.13. Enlist two core techniques that have enabled birth of modern biotechnology. [2]
- Q.14. Name the vectors and enzymes used in recombinant DNA technology. [2]
- Q.15. Many tribes live in the high altitude of Himalayas. How do these people solve the problem of altitude sickness? [2]
- Q.16. What are the consequences of deforestation? [2]
- Q.17. Why is CNG better than diesel? [2]
- Q.18. How does the cell mediated immune system work when our body is infected? [2]

Or

In which ways the study of biology has helped us to control infectious diseases?

Section C

- Q.19. How does the progeny formed from asexual reproduction is different from those formed by sexual reproduction? [3]
- Q.20. What are the similarities between spermatogenesis and oogenesis? [3]
- Q.21. How is elongation carried on during protein synthesis in a cell? [3]
- Q.22. The F_2 plants obtained in the above (Question 13) were selfed. The white flowered plants produced only white-flowered F_2 plants. Some of the purple-flowered F_2 produced only purple-flowered F_3 , while others produced both white and purple flowered F_3 plants. Provide the genetic basis for this observation. [3]
- Q.23. Give the pathogen, mode of transmission and symptoms of disease – Ascariasis. [3]
- Q.24. What is sewage? In which ways can sewage be harmful to us? [3]
- Q.25. Describe briefly the technique of gel electrophoresis. [3]
- Q.26. What is the significance of the slope of regression in a species area relationship? [3]

- Q.27. How do humans maintain their body temperature constant in summer and winter? [3]

Or

Explain diagrammatically the phosphorous cycle.

Section D

- Q.28. Describe briefly the structure of a mammary gland. [5]

Or

What is spermiogenesis? Write down various changes that occur during this process?

- Q.29. Describe in brief the process of transcription. [5]

Or

Give the salient features of the double-helix structure of DNA.

- Q.30. Anand a 14yr old boy thinks smoking makes him more energetic and feel like adult and thus more responsible citizen. He tries to smoke when he is with his peer group. As a friend you have to educate him [5]
- (a) Why he feels more energetic while smoking?
 - (b) Effects of CO in smoke
 - (c) Other ill effects on body
 - (d) What values are reflected in it?