

**CBSE Board**  
**Class XII Biology**  
**Sample Paper – 2**

**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.

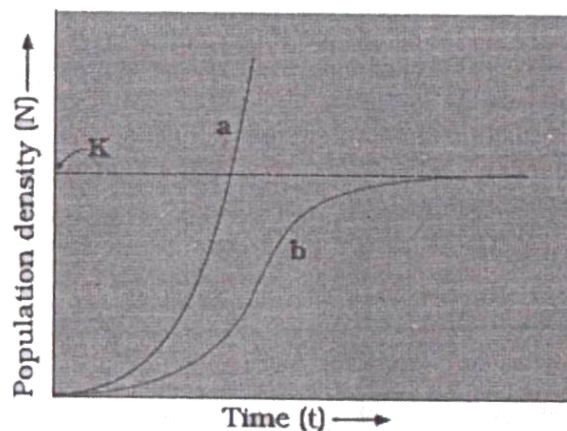
**Section A**

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|---|-----|
| Q.1. What kind of stem does banana have? How do you recognize it?   | [1] |
| Q.2. Which gases were taken by Miller and Urey in their experiment on abiotic synthesis of organic molecules? | [1] |
| Q.3. What is ecological succession?   | [1] |
| Q.4. What is camouflage?  | [1] |
| Q.5. Name the proteins produced by transgenes.  | [1] |
| Q.6. What is the main function of gel electrophoresis?  | [1] |
| Q.7. What is a plasmid?   | [1] |
| Q.8. Name two lymphoid organs.  | [1] |

**Section B**

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|--|-----|
| Q.9. What is syngamy? How does it differ from fertilisation?   | [2] |
| Q.10. In a cross between a black and a white guinea pig, all F <sub>1</sub> members are black. But F <sub>2</sub> generation raised by crossing two such F <sub>1</sub> progeny consists of approximately $\frac{3}{4}$ black and $\frac{1}{4}$ white guinea pigs.       | [2] |
| (a) What are the possible genotypes at each level?   |     |
| (b) What will be the offspring be like if two F <sub>2</sub> whites are mated?   |     |
| Q.11. In a plant, tallness (T) is dominant over dwarfness (t) and red flower character (R) is dominant over white (r). If tall and red flower (heterozygous) for both characters is crossed with dwarf and white flower, then what will be the probability of offspring? | [2] |

- Q.12. What are the differences between nucleoside and nucleotide? [2]
- Q.13. The pyramids can either upright or inverted for most of the ecosystems except for the pyramid of energy which is always inverted. Why? [2]
- Q.14. 'Aging of lakes and other water bodies is a natural process', then why is eutrophication treated as pollution? [2]
- Q.15. In the given population growth curve: [2]



- (a) What does the regions falling below level "K" in "a" and "b" indicate?
- (b) Which of the two is more realistic and why?
- Q.16. What were the two main discoveries that led to the birth of genetic engineering? [2]
- Q.17. How do multiple identical copies of DNA template take place? [2]
- Q.18. What are the two causes of fever? [2]

Or

Mention any two symptoms of AIDS.

**Section C**

- Q.19. What is the significance of parthenogenesis? [3]
- Q.20. What is ovulation? What happens to the Graafian follicles after ovulation? [3]
- Q.21. A pea plant with purple flowers was crossed with a plant with white flowers producing 40 plants with only purple flowers. On selfing, these plants produced 470 plants with purple flowers and 162 with white flowers. What genetic mechanisms account for these results? [3]
- Q.22. What acts as an inducer in lac operon? How does it switch on the operon? [3]
- Q.23. What are the advantages of producing plants by micropropagation? [3]
- Q.24. Name the pathogen, vector and symptoms of disease Elephantiasis (Filariasis). [3]
- Q.25. Do eukaryotic cells have restriction endonucleases? Justify your answer. [3]
- Q.26. How are red algae more successful to live in deep water? [3]
- Q.27. What ways do urbanization and increase in population contribute to population problem? [3]

Or

What are the effects of noise pollution?

**Section D**

- Q.28. Draw a labeled diagram of V.S. of apple and explain the biological importance of fruits. [5]

Or

What are the major functions of male accessory ducts and glands?

- Q.29. Describe briefly the mechanism of DNA replication. [5]

Or

Write full names of the different types of RNA. State only how each type is involved in protein synthesis.

- Q.30. Anand a 14 year old boy thinks smoking makes him more energetic and feels 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?