

## **SAMPLE QUESTION PAPER 3**

**Class – XII**

**BIOLOGY**

**Time allowed: 3hrs**

**Maximum Marks: 70**

### **General Instructions:**

- (i) All questions are compulsory.
- (ii) This question paper consists of five Sections A, B, C, D and E. Section A contains 5 questions of one mark each, Section B is of 5 questions of two marks each, Section C is of 12 questions of three marks each. Section D is of 1 questions of four marks each and Section E is of 3 questions of five marks each.
- (iii) 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 weightage. A student has to attempt only one of the alternatives in such questions.
- (iv) Wherever necessary, the diagrams drawn should be neat and properly labelled.

### **Section A**

- 1. How are flavr savr tomatoes different from normal tomatoes? [1]
- 2. Name the type of chemical bond formed between two nucleotide units of a DNA molecule? [1]
- 3. Why do we call restriction enzymes as molecular scissors? [1]
- 4. How a Water Hyacinth plant becomes so very harmful to the pond ecosystem? [1]
- 5. Write the source of Taq polymerase enzyme. [1]

### **Section B**

- 6. Name the pioneer and climax communities of a hydrarch succession. [2]
- 7. Into which structure does the head of spermatozoa remain embedded after formation? Name the hormone secreted by this structure. [2]
- 8. How Darwin's finches explain adaptive radiation? [2]
- 9. Why colostrum is so important to an infant? [2]
- 10. What are RFLP and VNTRs? Which technique are they used into? or What is PCR method? Explain its significance. [2]

### **Section C**

- 11. Organisms are being used as biofertilizers and bioweapons. Comment and give examples from each group. [3]
- 12. a) Which hormones are responsible for parturition? [3]
- b) Draw labeled diagram of a blastocyst.
- c) Mention the site of fertilization, describe how zygote develops and when it attaches to uterus?
- 13. a) What is a test cross? How is it useful to the geneticist? [3]

b) Write the genotype and phenotype of progenies formed by a cross between a pure tall plant and a hybrid tall plant.

Or

Describe male heterogamety and female homogamety through two suitable examples.

14. Which features of tumor causing bacteria *Agrobacterium* makes it suitable as a good cloning vector? [3]

15. Describe the process of biogas production. [3]

16. Write the source and effect of following: a) Smack b) Cocaine c) LSD [3]

Or

a) What are autoimmune diseases? Name any two.

b) What is basis for vaccination in human beings? Write the full form of DPT vaccine.

17. What is RNA silencing? Give the example of *Meloidogyne incognita* for the same. [3]

18. a) Draw well labelled diagram of a human sperm. [3]

b) What will happen if the acrosome of a sperm is removed?

19. Explain the three types of natural selection along with their prescribed graphs. [3]

20. Write the sources and roles of following: [3]

a) cyclosporin A b) statins c) SCPs Material downloaded from

21. Define tissue culture and micropropagation. Mention their significance for enhancement of food production. [3]

22. What is active and passive immunity? Give examples of vaccines that provide active and passive immunity. Mention which one is long lasting and why? [3]

#### **Section D**

23. Amrita wants to increase the production of brinjals in her field. But she doesn't want to use Bt brinjal variety to be grown however she is herself using Bt cotton clothes. What can the possible reasons of her prejudice? Can you suggest her an environment friendly method of growing healthy brinjals? [4]

#### **Section E**

24. a) Tubectomy and Vasectomy cannot be considered as methods of contraception. Give reason.

b) How techniques like GIFT, ZIFT, AI are different from each other? Describe each one of them.

c) Under which conditions will a couple need surrogate mother's help? [5]

Or

a) Describe in detail the events taking place during oogenesis.

b) When does meiotic division completes in the ovum?

25. Define central dogma. How retroviruses are an exception to the unidirectional information flow? Describe the steps involved in life cycle of the AIDS virus. [5]

Or

- a) What are pleiotropic genes? Give example.
  - b) Describe the inheritance pattern of human skin colour.
  - c) Differentiate between co dominance and incomplete dominance.
26. Describe in detail the ecosystem services. Discuss the role played by biodiversity in maintenance of ecosystem services. [5]

Or

- a) Explain the specificity of energy flow in the ecosystem with reference to ecological pyramids.
- b) What is standing crop?
- c) Discuss the role played by biotic factors in nutrient cycling within the ecosystem.

