

## SAMPLE QUESTION PAPER-IV

**Class: XII**  
**Time : 3 Hours**

**BIOLOGY (Theory)**  
**Max. Marks : 70**

### GENERAL INSTRUCTIONS:-

- (i) All questions are compulsory.
  - (ii) The question paper consists of four sections A, B, C and D. Section-A contains 8 questions of 1 mark each, Section B is of 10 questions of 2 marks each, Section C has 9 questions of 3 marks each whereas Section D is of 3 questions of 5 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 labeled.
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### SECTION – A

1. Where was fossils of Australopithecus found in Africa ? 1
2. Name the common ancestor of cycads and dicots ? 1
3. What is the medical use of cyclosporin – A ? 1
4. Why is the gene encoding for ‘Cry’ protein inserted into a crop plant? 1
5. Expand MALT 1
6. Write the scientific name of any one plant that exhibits incomplete dominance in the inheritance of its flower colour . 1
7. Name the class of enzymes to which restriction enzymes belong? 1
8. Which catalytic metals are fitted in to automobiles for reducing emission of poisonous gases ? 1

### SECTION – B

9. How the following methods helps in birth control ?  
(a) IUD (b) Pills 2
10. Why is the number of trophic level in an ecosystem limited to 4 to 5? Explain with the help of example ? 2
11. Mother belongs to “A” group of blood father to “B” They had four children of A, B, AB, O type, Give the genotype of parents and their children ? 2  
OR  
Explain the main features of Turner’s Syndrome.
12. Sketch and label the structure of an antibody molecule. 2
13. List the factor which affect the rate of decomposition ? 2

14. How do the members of fungi and algae reproduce by special asexual structures? 2
15. Name the useful vector to deliver desirable genes in to a animal cells ? How its has been modified ? 2
16. What is Oparin Haldane theory ? can life be originated abiotically inside the laboratory today ? 2
17. Explain the terms primary lymphoid organ and secondary lymphoid organ with suitable examples ? 2
18. What steps would you suggested for the conservation of wild life ? 2

### SECTION – C

19. What is the main difference between Oogenesis and spermatogenesis ? 3
20. “Germplasm collection is a very effective method of plant breeding.”. How it can be done ? Is there any other method for plant breeding ? 3
21. A<sub>3</sub>' \_\_\_\_\_ 5' B 3

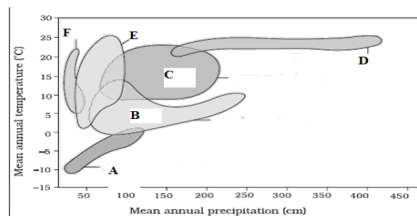
C<sub>5</sub>' \_\_\_\_\_ 3' D

AB and CD represent two strands of a DNA molecule

When this molecule undergoes replication forming a replication fork between A and C in the above.

- (i) Name the template strands for replication.
- (ii) Using which strand as the template will there be continuous synthesis of a complementary DNA strand ?
- (iii) Complementary to which strand will okazaki segment get synthesized discontinuous synthesis will occur.

22. Identify the biome indicated as A, B, C, D, E and F 3



23. What are selected marker in the vectors? Name some useful marker in E. Coli ? 3

**OR**

What are down stream processing operation ?

24. With the transcription of one DNA following mRNA chain was obtained.  
5' - AUG CCC GGG AAA UUU CCC UGA - 3' 3

- (i) Write the anticodons present on tRNA molecules at anticodon loop for each codon on mRNA.
- (ii) How many amino acid will form this oligopeptide chain

25. Do you think that friends can influence one to take drugs heroin ? If yes how may one protect himself /herself from such an influence ? 3
26. What do you mean by e-wastes ? What are the common practices of their disposal ? 3  
What risk factor are associated with their recycling in developing countries?
27. Distinguish between a Test cross and Back cross 3

**SECTION – D**

28. Draw the typical dicot embryo, Label the parts, state the function of each of the labeled part. 5

**OR**

What is menstruation ? What are the specific action of FSH, LH, estrogen and progesterone in the menstrual cycle?

29. What are transgenic animals ? Give their main benefits to humans. 5

**OR**

What is gene therapy ?

Illustrate using the example of adenosine deaminase deficiency ?

30. The CBI department could observe some skin scrapings in the nails of a murdered man. There were two persons suspected in this offence.  
How will the forensic department give a clue to find out the culprit ? Explain the technique ? What are the major steps ? 5

**OR**

Differentiate between the following:

- a) Homozygous and Heterozygous
- b) Monohybrid and Dihybrid
- c) Dominance and Recessive

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