

Sample Paper – 2010
Class – XII
Subject – Biology

Time: 3 Hrs

M M : 70

General Instructions:

** All questions are compulsory.*

** The question paper consists of four sections A, B, C, D. Section A consists 8 questions of 1 mark each. Section B is of 10 questions of 2 marks each. Section C is of 9 questions of 3 marks each. Section D consists of 3 questions of 5 marks each.*

** There is no overall choice. However an internal choice has been provided in 2 questions of 3 marks and all 3 questions of 5 marks.*

Where ever necessary draw neat and labeled diagram.

Section A

1. Which are the nuclei that fuse to form endosperm?
2. What will be the ploidy of:
 - a. Cells of microspore tetrad.
 - b. Cells of nucleus.
3. Match the column A with column B

COLUMN A

- a. Alec Jeffreys
- b. Griffith
- c. Temnin
- d. Jacob and Monad

COLUMN B

- i. Transformation
- ii. Operon
- iii. DNA finger printing
- iv. Reverse transcription

4. Define Biofortification.
5. Thermostable DNA is needed in amplification. Why?
6. Name the enzyme used to digest cell walls of :
 - a. Bacteria
 - b. Fungi , for genetic engineering
7. What is a mutagen? Give two examples.
8. Where did Chipkop movement start initially? Who was their leader?

Section B

9. How is polyspermy prevented in humans?
10. Expand IUD. Give examples. How it prevents fertilization?

11. Identify the type of mutation occurring in the following diagram. Define this mutation. Write one feature related with disease caused by this mutation.
12. What is a single cells protein? What is its significance?
13. What is T_1 plasmid? Name the organism where it is found. How does it help in genetic engineering?
14. Why the length of a food chain in an ecosystem is generally limited to four trophic levels. Explain with example.
15. Expand the term CNG. Why is it more eco friendly than diesel?
16. Explain with the help of two examples of pyramid of numbers and pyramid of biomass can look inverted.
17. Differentiate between gene flow and genetic drift.
18. List any four factors which may lead to the loss of biodiversity.

SECTION C

19. Menstrual cycle completes in three phases. Name them. Also write changes occur in the following organs in different phases:
- Ovaries
 - Fallopian tubes
 - Uterus
20. Given below is the cross sectional view of microsporangium. Label four wall layers A, B, C and D. Give one function of each layer.
21. E. coli was cultured in medium containing $^{15}\text{NH}_4\text{Cl}$. After first generation E. Coli transferred to culture medium $^{14}\text{NH}_4\text{Cl}$. Give answers of following questions:
- Who performed this experiment?
 - What is proven by this experiment?
 - What is the time duration by which E. coli completes its first generation?
 - At 40 minutes what would be the nature of the DNA.
 - How various samples were separated independently?
22. Define multiple-alleles and co-dominance. The following table shows genotype and phenotype of ABO blood groups. Fill the gaps.

GENOTYPE	PHENO TYPE/BLOOD GROUPS
$I^A I^A$	A
_____	A
$I^B I^B$	B
_____	B
$I^A I^B$	_____
_____	O

23. Give reasons for the following statements:

- Evolution is based on chance events in nature and chance mutation in organisms
- First evolved organisms were heterotrophs and anaerobes.

OR

Evolution is a continuous process. Give evidences for evolution from

- Paleontology
- Morphology and anatomy
- Biochemical

24. Answer the question according to instructions given:

- Malaria: Pathogen name, Mode of transmission, incubation period
- Cocaine: Type of drug, obtained from, effects on

25. How does bio-fertilizer enrich the fertility of soil?

OR

What is sewage? Write differences between primary and secondary sewage treatment.

26. Differentiate inbreeding and out breeding. What type of danger is associated with inbreeding? Name two animal breeds which are developed by cross breeding.

27. Give scientific name of bacteria which produces crystal proteins. How are these proteins useful in agriculture? What is the difference between Cry and cry?

SECTION-D

28. Given below is a DNA segment which constitute gene.

- Will the whole gene be transcribed into RNA primarily
- Name the shaded and unshaded part.
- Explain how this gene expressed in cell.
- How this is different from prokaryotic gene in expression.

OR

- a. What are the three types of RNAs?
- b. Which one of the three has shape of clover leaf in 2D structure? Draw and label its four parts.
- c. How remaining two RNAs are related to information flow in protein synthesis?

29. What is gene therapy? Illustrate using the example of ADA disease

OR

How does restriction enzyme function? Show it along with diagrammatic representation.

30. Give source, effect of following pollutant:

- a. CFC
- b. SPM
- c. NO₂
- d. SO₂
- e. CH₄

OR

Explain the difference between seral stage and climax community during succession.
How succession differ in terrestrial and aquatic system

Best for your exams