

B-27

Roll No.

Total No. of Questions : 27]

[Total No. of Printed Pages : 4

12thARF(SZ)JKUT2024-25

327

BIOTECHNOLOGY

Time : 3 Hours]

[Maximum Marks : 70

SECTION-A

(OBJECTIVE TYPE QUESTIONS)

1 each

1. Biolistic technique is used in :

- (A) Tissue culture process
- (B) Hybridization process
- (C) Germplasm conservation process
- (D) Gene transfer process

2. Name one dye commonly used to stain proteins.

3. Protein structure is determined by using which method ?

- | | |
|---------------------|-------------------|
| (A) rDNA technology | (B) Computer |
| (C) NMR | (D) None of these |

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Turn Over

4. What will you term a cell that gives rise to entire organism ?

5. T-cell population can be eliminated by using :

(A) Antibiotics

(B) Polyclonal antibodies

(C) Antigens

(D) Specific MoAb

SECTION-B

(VERY SHORT ANSWER TYPE QUESTIONS) 2 each

6. What is structural proteomics ?

7. What is expression sequence tag (EST) ?

8. Write short note on microprocessor.

9. Explain significance of bioremediation.

10. What is downstream processing ?

11. What are the benefits of somaclonal variations ?

12. Write a short note on Electroporation.

SECTION-C

(SHORT ANSWER TYPE QUESTIONS) 3 each

13. Write a detailed note on Northern blotting technique.

14. What are various applications of PCR ?
15. Write three distinguishing features of pBR322 and pUC19 vectors.
16. Write various applications of RFLP.
17. What do you understand by protein efficiency ratio (PER) ?
18. What are the main branches of genomics one can study ?
19. What are SNPs ? Indicate the importance of generating SNP maps.
20. Write short notes on the following :
 - (a) Biomining
 - (b) Bioremediation
21. What are the advantages of single cell protein (SCP) ?
22. Write short notes on the following :
 - (a) Virus Indexing
 - (b) Embryo rescue
23. Briefly explain any two characteristic features of animal cell culture.
24. What is the role of CO_2 in animal cell culture ?

SECTION-D

(LONG ANSWER TYPE QUESTIONS)

5 each

25. Define electrophoresis. How this technique is used in characterization for the purity of proteins ?

Or

Explain the significance of protein based products with suitable examples. Explain the role of any *two* protein based products.

26. What are the common cloning vectors used in rDNA technology ? Explain any *two* of them in detail.

Or

Define DNA library. Differentiate between cDNA and Genomic library.

27. What are various types of cultures ? Explain in detail any *two* of them in detail.

Or

Write detailed notes on the following :

- (a) Organogenesis
- (b) Somatic embryogenesis