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Reg. No. : .....

Code No. : 30388 E Sub. Code : CMZO 62

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2025

Sixth Semester

Zoology – Core

ANIMAL BIOTECHNOLOGY

(For those who joined in July 2021 and 2022 only)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. Plasmids are present in

- (a) Bacteria (b) Virus  
(c) Fungi (d) Protozoa

2. Klenow enzyme is used to synthesize.

- (a) rRNA (b) tRNA  
(c) cRNA (d) mRNA

3. Northern blotting technique was devised by

- (a) Towbin (b) Alwine  
(c) Southern (d) Walter Heap

4. Separation of Macromolecules based on their size and charge.

- (a) Electrophoresis  
(b) DNA sequencing  
(c) Blue white selection  
(d) Transformation

5. The medium for culture of cells is treated with an enzyme

- (a) Trypsin (b) Lipase  
(c) Renin (d) Relaxin

6. Artificial Skin is an example of

- (a) Cell culture (b) Tissue culture  
(c) Sub culture (d) Organ culture

7. Cut ends of DNA are joined by the enzyme

- (a) DNA legase (b) Restriction enzyme  
(c) Ribozyme (d) Klenow enzyme

8. \_\_\_\_\_ is the enzyme used in dairy industries to improve the qualities of dairy products.
- (a) Klenow enzyme
  - (b)  $\beta$ -galactosidase
  - (c) Insulin
  - (d) Restriction enzyme
9. Transgenic gold fish was made by the introduction of human.
- (a) Sex hormone
  - (b) ACTH
  - (c) Insulin
  - (d) Growth hormone
10. Organo for transplantation in human system is produced in transgenic.
- (a) Pigs
  - (b) Mouse
  - (c) Rabbit
  - (d) Fish

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).  
Each answer should not exceed 250 words.

11. (a) Describe the structure of SV40.
- Or
- (b) Explain blue white selection of recombinant DNA.
12. (a) Write notes on DNA probes.
- Or
- (b) Describe the steps involved in PCR.
13. (a) Enumerate the characteristics features of cell-lines.
- Or
- (b) Illustrate cloning of Dolly.
14. (a) Enumerate the steps in Cryopreservation
- Or
- (b) Describe the formation of Ribozyme from RNA.

15. (a) Write short notes on Bio-weapons.

Or

(b) Explain the process of Transgenesis in Mice.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)

Each answer should not exceed 600 words.

16. (a) Describe Lamda ( $\lambda$ ) phage as Vector.

Or

(b) Enumerate the methods to identify recombinant cells.

17. (a) Explain Northern blotting technique.

Or

(b) Evaluate DNA finger printing and its applications.

18. (a) Describe the production of Monoclonal antibodies.

Or

(b) Illustrate the culture of artificial skin.

19. (a) Examine the working principle of Biosensor and its applications.

Or

(b) Give the steps in the production of  $\beta$ -Galactosidase.

20. (a) Describe super bug and its application.

Or

(b) Enumerate the production of Biogas.