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MZO-002

M. SC. (ZOOLOGY) (MSCZOO)

Term-End Examination

December, 2024

MZO-002 : GENETICS AND ANIMAL

BIOTECHNOLOGY

Time : 2 Hours

Maximum Marks : 50

Note : Attempt any **five** questions. All questions carry equal marks.

1. (a) Discuss the different categories of transcription factors. 5
- (b) Explain in brief about Zyon hypothesis. 5
2. Discuss in detail the steps for the construction of C-DNA library. 10

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3. Discuss the different applications of gene therapy. 10

4. What is an operon ? With suitable diagrams, explain how is gene expression regulated in the trp operon by the amino acid tryptophan.

2+8=10

5. What are the steps of gene cloning ? Describe the different DNA manipulation enzymes used in this technique. 4+6=10

6. (a) Explain the methodology of the production of recombinant growth hormone with the help of a suitable diagram. 5

(b) Describe the mechanism of gene known-down by RNA interference. 5

[3]

7. Write short notes on the following : $2\frac{1}{2} \times 4 = 10$

- (a) Karyotyping
- (b) Transposable elements
- (c) Histone modifications
- (d) Dominant epistasis

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