

2020

ZOOLOGY — HONOURS

Sixth Paper

(Unit - II)

(Animal Biotechnology and Applied Zoology)

Full Marks : 50

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words  
as far as practicable.*

Answer **question no. 1** and **any two** questions from the rest.

1. Answer **any two** of the following : 10×2
- (a) Mention two uses of lac in industry.
  - (b) What is the significance of IPM?
  - (c) Name two biological contaminants in cell culture.
  - (d) What is royal jelly? Mention its significance.
  - (e) Name the chemical constituents of natural silk.
  - (f) What do you mean by therapeutic index?
  - (g) Mention the role of HCG in induced breeding of fish.
  - (h) What is DNA microinjection?
2. (a) Give a brief account of non-viral methods used during gene therapy.  
(b) Elaborate the process of artificial insemination (AI) and embryo transfer (ET) technology. 6+4½+4½
3. (a) Describe the applications of transgenic technologies in conservation biology.  
(b) What are the probable risks of using transgenic animals in poultry and dairy industry?  
(c) Differentiate between finite and continuous cell lines. 6+6+3
4. (a) What do you mean by 'natural' and 'artificial' hybridizations?  
(b) Write a short account on heredity of hybrids in the field of aquaculture, citing suitable examples.  
(c) Enlighten 'irradiation of spermatozoa' in the light of gynogenesis in fish. (3+3)+4½+4½

**Please Turn Over**

5. What is Proteomics? Describe different methods of transcriptome analysis. Distinguish between microarray-based and non array-based methods of transcriptome analysis, giving merits and demerits of each of them. 3+4½+7½
6. Describe the basic requirements to design a deep litter for poultry birds. State the merits and demerits of deep litter system of poultry keeping. Describe the process of rearing of silkworm in an ideal rearing room. 4½+4½+6
7. What do you mean by monolayer vs suspension culture? Give one example of each. Name two human cell lines. What do you mean by the terms —
- (a) dose and dosage
- (b) LC<sub>50</sub> and LD<sub>50</sub>. 3+3+3+3
8. Write notes on : 4½+6+4½
- (a) Process of eyestalk ablation
- (b) Anti-sense technology as a tool of gene therapy
- (c) Components of M – 1993.
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