

PAPER ID—10319

**B. Sc. (Hons.) EXAMINATION, 2023**

(Sixth Semester)

ZOOLOGY

Code : 604

Animal Biotechnology

Time : 3 Hours

Maximum Marks : 40

Before answering the question-paper candidates should ensure that they have been supplied to correct and complete question-paper. No complaint, in this regard, will be entertained after the examination.

**Note :** There are nine questions in all. Question No. 1 is compulsory. Out of the remaining eight questions, attempt *four* questions, selecting *one* question from each Unit.

1. Answer the following in brief : **10×1=10**
- (a) Gene Gun
  - (b) Patent
  - (c) Minimal essential media
  - (d) Microarray
  - (e) Dolly
  - (f) Primer
  - (g) Gene therapy
  - (h) RAPD
  - (i) Stem cells
  - (j) Primary cell culture.

**Unit I**

2. Write short notes on the following :
- (a) Cell lines and its types **4**
  - (b) Applications of animal tissue culture. **4**
3. Explain the general composition of the media used in animal cell culture. Discuss the advantages and disadvantages of using serum in animal culture. **8**

## Unit II

4. Explain the chain termination method of DNA sequencing. Also discuss its advantages and disadvantages. 8
5. Differentiate between the following : 4×2=8
- (a) Genomic DNA and cDNA libraries
  - (b) Agarose and polyacrylamide gel electrophoresis
  - (c) Chain degradation and chain termination method of DNA sequencing
  - (d) Plasmids and cosmids.

## Unit III

6. Write short notes on the following :
- (a) Biosafety levels 4
  - (b) Applications of transgenic mice and fish. 3
7. What are intellectual property rights ? Explain the process of filing a patent. 7

## Unit IV

8. Write short notes on the following :
- (a) Recombinant vaccines 4
  - (b) Diagrammatically explain the production of recombinant insulin. 3
9. Explain the technique of DNA fingerprinting and discuss its applications. 7