

**U.G. 5th Semester Examination-2021****Molecular Biology & Biotechnology****[HONOURS]****Discipline Specific Elective (DSE)****Course Code : MBBT-DSE-T-503****(Animal Biotechnology)**

Full Marks : 40

Time :  $2\frac{1}{2}$  Hours*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.*1. Answer any **five** questions from the following: $2 \times 5 = 10$ 

- a) Gene therapy in human was first practised to cure which disease? Name one virus used as vector in gene therapy.
- b) What are Totipotent stem cells?
- c) What is Prophage?
- d) Name the major products of the *pol*-coding region of Retrovirus. What is the full form of SIV?
- e) Mention two advantages of microinjection.
- f) What is genetic engineering?

g) What is artificial insemination?

h) Define a Transgenic Animal.

2. Answer any **two** questions:  $5 \times 2 = 10$ 

- a) How are transgenic animals created?
- b) Describe Liposome mediated gene transfer.
- c) Differentiate between Prophage and Provirus.
- d) What is the aim of Molecular engineering?

3. Answer any **two** questions:  $10 \times 2 = 20$ 

- a) Describe Retroviral replication cycle.
- b) Write a note on Haematopoietic stem cells and gene therapy.
- c) Genetic modification can be applied in two very different ways— describe each. What are the Ethical Concerns of Genome Editing?  $5+5$
- d) Write short notes on:
  - i) Biolistics or Microprojectiles
  - ii) Polyethylene glycol mediated transfection.

*[Turn Over]*