



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Sc. (GE)/SEM-3/MSGEN (ABT)-305-A/2010-11**

**2010-11**

**GENETIC ENGINEERING IN ANIMALS**

Time Allotted :  $1\frac{1}{2}$  Hours

Full Marks : 35

*The figures in the margin indicate full marks.*

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

**GROUP – A**

**( Multiple Choice Type Questions )**

1. Choose the correct alternatives for any *five* of the following :

5 × 1 = 5

- i) The transgenically produced human monoclonal antibodies against CD20 can confer protection of
  - a) Cancer
  - b) Hepatitis
  - c) Alzheimer's disease
  - d) None of these.
- ii) Tissue plasminogen activator (tPA) has a potential clinical value in the treatment of
  - a) Cancer
  - b) Hepatitis
  - c) Coronary thrombosis
  - d) Alzheimer's disease.
- iii) Expression of a protein in transgenic animal milk is higher than Chinese hamster ovary culture system at the level of
  - a) 1 – 2 fold
  - b) 5 – 10 fold
  - c) 10 – 20 fold
  - d) 10 – 100 fold.





**GROUP – C**

**( Long Answer Type Questions )**

Answer any *one* of the following.

1 × 15 = 15

7. What is a biopharmaceutical ? Discuss why transgenic biopharmaceuticals are more efficient than produced in other systems. Briefly discuss the production and uses of transgenic monoclonal antibodies, interferons, vaccines. 1 + 5 + 3 + 3 + 3
8. What is Artificial Insemination ( AI ) ? What are the advantages and disadvantages of AI ? Discuss the technique of AI practiced in dairy cattles. 2 + 4 + 9
9. What is embryo transfer ? Discuss the technology of embryo transfer in cattles. What are the advantages of this technology ? 2 + 7 + 6
10. What is DNA microinjection ? Discuss the steps involved in producing transgenic pig by microinjection of oocytes. Discuss two applications of transgenic pigs. 1 + 10 + 4
11. Discuss the biosafety and patenting issues of transgenic animals.  $7\frac{1}{2} + 7\frac{1}{2}$
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