



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/M.Sc (GE)/SEM-3/MSGEN(ABT)-305A/2012-13**

**2012**

**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) A normal ejaculate from a dairy bull will contain

- a) 1 to 2 billion sperms
- b) 2 to 4 billion sperms
- c) 5 to 10 billion sperms
- d) 10 to 20 billion sperms.

ii) Most commonly used cryoprotectant is

- a) DMSO
- b) Glycerol
- c) both (a) and (b)
- d) none of these.

iii) Ganciclovir is an analog of

- a) Adenosine
- b) Guanosine
- c) Thymidine
- d) None of these.



- iv) Interferon-gamma is an
- a) Antibacterial agent      b) Antiviral agent
- c) both (a) and (b)      d) None of these.
- v) A normal ejaculate from a dairy bull can be used to inseminate
- a) 50 to 100 cows      b) 100 to 200 cows
- c) 200 to 400 cows      d) 300 to 1000 cows.
- vi) First chimeric mice were produced in
- a) 1960s      b) 1970s
- c) 1980s      d) 1990s.
- vii) First successful embryo transfer was done in
- a) 1850      b) 1870
- c) 1880      d) 1890.
- viii) Half-life of FSH is
- a) 4 hrs.      b) 10 hrs.
- c) 20 hrs.      d) 40 hrs.

**GROUP - B**

**( Short Answer Type Questions )**

Answer any *three* of the following.

3 × 5 = 15

2. Discuss cell potencies.
3. Discuss the uses of transgenic goats.
4. Discuss the transgenic production of spider silk in mammalian system and what are its uses ?
5. Discuss briefly the method of DNA microinjection in oocytes.
6. What is xenografting ?



**GROUP – C**  
**( Long Answer Type Questions )**

Answer any *one* of the following.

1 × 15 = 15

7. Explain different types of animal tissue culture with example. What are the advantages and disadvantages of serum free media ? What are the Biosafety Guidelines in Genetic Engineering and Biotechnology for Laboratory work ? 4 + 5 + 6
8. What is artificial insemination ( AI ) ? What are the advantages and disadvantages of AI ? Discuss the method of AI. 2 + 3 + 10
9. What is animal pharming ? Discuss the production immunomodulators, vaccine and hormones in transgenic animals. Discuss the advantages and disadvantages of DNA microinjection in creating transgenic animals. 2 + 8 + 5
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