



Name :

Roll No. :

Invigilator's Signature :

CS/B.Sc (H)/BT/SEM-4/ABT-404/2013

2013

ANIMAL BIOTECHNOLOGY

Time Allotted : 3 Hours

Full Marks : 70

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 *ten* of the following : 10 × 1 = 10

i) Which of the following is a cryoprotective agent for embryos ?

- a) dimethyl sulphoxide
- b) hydrazine
- c) formaldehyde
- d) none of these.

ii) Typical volume for microinjecting DNA into mouse fertilized egg is

- a) 1-2 μ l
- b) 10-20 μ l
- c) 20-30 μ l
- d) none of these.



- ix) How might mammals be cloned ?
- a) homologous recombination
 - b) transfection with a retrovirus
 - c) YACs
 - d) nuclear transplantation
 - e) BACs.
- x) Which of the followings was first used for gene transfer in gene therapy ?
- a) Retrovirus
 - b) Adenovirus
 - c) YAC
 - d) None of these.
- xi) ES cells are
- a) Totipotent
 - b) Pluripotent
 - c) Multipotent
 - d) None of these.
- xii) Human haemoglobin has successfully expressed in
- a) Transgenic zebra fish
 - b) Transgenic mouse
 - c) Transgenic goat
 - d) Transgenic pig.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. Describe the procedure of using ES cells for producing transgenic mice & micro propagation for producing transgenic chicken.
3. Write down the uses of transgenic animals in agriculture & medicine.
4. Write short notes on any *one* of the following : 1×5
 - i) Transgenic goat
 - ii) Transgenic pig
 - iii) Transgenic cow.

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5. Describe the retroviral method of gene transfer.
6. What is IVF ? Explain the procedure of IVF. 1 + 4

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. What is trypanosomiasis ? Name the parasites that cause the disease. Describe the life cycle of parasites in the arthropod vector and mammalian host. What are the control measures of this disease ? 1 + 3 + 5 + 6
8. What is coccidiosis ? In which animals this disease is common ? What is precocious development ? In which parasites it can be used ? What are the clinical signs of coccidiosis ? Describe briefly the life cycle of coccidian. Name two types of vaccination procedure against coccidiosis. 2 + 1 + 2 + 1 + 3 + 4 + 2
9. What is theileriosis ? Name the parasites that cause the disease. Describe the life cycle of parasites in the arthropod vector and mammalian host. Name four important biotechnological tools used for diagnosis of theileriosis. 1 + 3 + 5 + 6
10. What are retroviruses ? Discuss retroviruses could be used for gene transfer. How can you classify retroviruses according to their envelop proteins ? What are the benefits of retroviral gene transfer ? 1 + 10 + 2 + 2
11. What are embryonic stems cells ? How can you isolate embryonic stem cells and how they can be used for creating transgenic animals ? 2 + 13