Name :	
Roll No. :	A Dame of Canada and California

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.

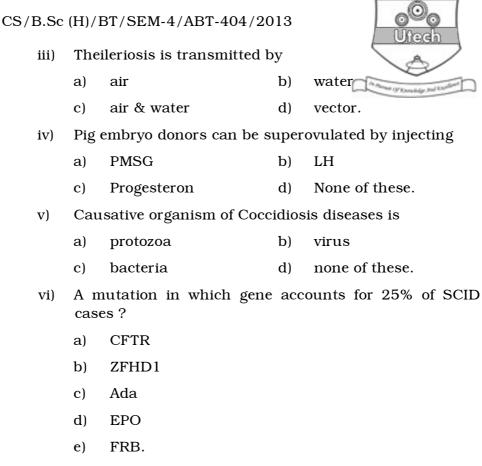
## **GROUP – A**

## (Multiple Choice Type Questions)

- 1. Choose the correct alternatives for any *ten* of the following :  $10 \times 1 = 10$ 
  - 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 μl b) 10-20 μl
    - c)  $20-30 \ \mu l$  d) none of these.

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[ Turn over



- vii) What is a drawback to using AAV ?
  - a) AAV does not provoke antibody development
  - b) The virus is small and can only package small amounts of DNA
  - c) AAV has a wide host and tissue range
  - d) AAV integrates its DNA into the host genome thus causing cancer
  - e) None of these.
- viii) Microinjection of foreign DNA in a pronucleus cause DNA integration in the genome
  - a) tandemly b) randomly
  - c) any of these d) none of these.

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- CS/B.Sc (H)/BT/SEM-4/ABI 2013 How might mammals be cloned ? homologous recombination
- b) transfection with a retrovirus
- c) YACs

ix)

a)

- d) nuclear transplantation
- e) BACs.
- Which of the followings was first used for gene transfer X) in gene therapy?
  - Retrovirus b) Adenovirus a)
    - YAC None of these. d)
- xi) ES cells are

c)

a)

- Totipotent b) Pluripotent
- c) Multipotent d) None of these.
- xii) Human haemoglobin has successfully expressed in
  - Transgenic zebra fish Transgenic mouse a) b)
    - Transgenic goat Transgenic pig. c) d)

### **GROUP – B**

### (Short Answer Type Questions)

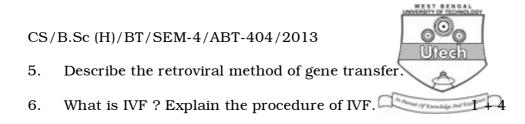
Answer any *three* of the following.  $3 \times 5 = 15$ 

- 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 :  $1 \times 5$

3

- i) Transgenic goat
- Transgenic pig ii)
- iii) Transgenic cow.

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#### **GROUP – C**

#### (Long Answer Type Questions)

Answer any *three* of the following.  $3 \times 15 = 45$ 

- 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

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