CS/B.Sc (H) (BT)/SEM-4/ABT-404/09

1. .....
Signature of Invigilator

2. .....
Signature of the Officer-in-Charge

Reg. No. | | | | | | | | | | | | | | |

Roll No. of the Candidate | | | | | | | | | | | | | | |

CS/B.Sc (H) (BT)/SEM-4/ABT-404/09

ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

ANIMAL BIOTECHNOLOGY (SEMESTER - 4)

Time : 3 Hours] [Full Marks : 70

INSTRUCTIONS TO THE CANDIDATES :

1. This Booklet is a Question-cum-Answer Booklet. The Booklet consists of **32 pages**. The questions of this concerned subject commence from Page No. 3.
2. a) In **Group – A**, Questions are of Multiple Choice type. You have to write the correct choice in the box provided **against each question.**
   b) For **Groups – B** & **C** you have to answer the questions in the space provided marked 'Answer Sheet'. Questions of **Group – B** are Short answer type. Questions of **Group – C** are Long answer type. Write on both sides of the paper.
3. **Fill in your Roll No. in the box** provided as in your Admit Card before answering the questions.
4. Read the instructions given inside carefully before answering.
5. You should not forget to write the corresponding question numbers while answering.
6. Do not write your name or put any special mark in the booklet that may disclose your identity, which will render you liable to disqualification. Any candidate found copying will be subject to Disciplinary Action under the relevant rules.
7. **Use of Mobile Phone and Programmable Calculator is totally prohibited in the examination hall.**
8. You should return the booklet to the invigilator at the end of the examination and should not take any page of this booklet with you outside the examination hall, **which will lead to disqualification**.
9. Rough work, if necessary is to be done in this booklet only and cross it through.

No additional sheets are to be used and no loose paper will be provided

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Marks Obtained

	Group – A										Group – B			Group – C				
Question Number																	***Total Marks***	***Examiner's Signature***
Marks Obtained																		

.....
Head-Examiner/Co-Ordinator/Scrutineer

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ENGINEERING & MANAGEMENT EXAMINATIONS, JUNE – 2009

ANIMAL BIOTECHNOLOGY

SEMESTER – 4

Time : 3 Hours] [Full Marks : 70

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 biopharmaceutical product ?

a) ATryn b) DMEM

c) PMSG d) FCS. ☐

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

a) Dimethyl sulphoxide b) Hydrazine

c) Formaldehyde d) None of these. ☐

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

a) 1-2 μl b) 10-20 μl

c) 20-30 μl d) none of these. ☐

iv) 'Dolly', the world's first mammalian clone was born in the year

a) 1995 b) 1996

c) 1997 d) none of these. ☐

v) Estrus synchronization in a goat can be done by

a) progesteron ear implant b) estrogen ear implant

c) LH ear implant d) all of these. ☐

vi) Pig embryo donors can be superovulated by injecting

a) PMSG b) LH

c) Progesteron d) None of these.

vii) Causative organism of foot and mouth disease is

a) protozoa b) virus

c) bacteria d) none of these.

viii) First successful embryo transfer in animal was done in the year

a) 1890 b) 1980

c) 1988 d) 1998.

ix) The more potent tool for rapid genetic progress is

a) artificial insemination b) embryo transfer

c) both are equally potent d) none of these.

x) Repeated exposure to superovulatory treatment may

a) increase superovulatory response

b) decrease superovulatory response

c) bring no change in superovulatory response

d) lead to the death to the animal.

xi) Which of the following is the patent name of PMSG ?

a) Folltropin b) Super-Ov

c) Folligon d) FSH-P.

xii) First successful gene therapy is given to a patient suffering from

a) Phenylketonurea b) SCID

c) Hepatitis d) None of these. ☐

xiii) *In vitro* maturation of porcine oocytes can be done in an environment containing

a) 5% CO_2 b) 15% CO_2

c) CO_2 d) CO_2 never used. ☐

xiv) Half-life of PMSG is

a) 12 hrs b) 22 hrs

c) 42 hrs d) 52 hrs. ☐

xv) Which is the most efficient method of embryo sexing ?

a) Karyotyping of blastomeres

b) detection of HY antigen

c) PCR of Y chromosome specific marker

d) All are equally equivalent. ☐

GROUP – B

(Short Answer Type Questions)

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

2. Write a short note on DNA microinjection of oocytes. 5

3. Discuss the method of cryo-preservation of embryos. 5

4. Write a short note on Electroporation. 5

5. What is the causative agent of foot and mouth disease ? How can it be controlled ? 2 + 3

6. What is trypanosomiasis ? What are the control measures of this disease ? 2 + 3

GROUP – C

(Long Answer Type Questions)

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

7. What are the use of transgenic animals in agriculture and medicine ? Describe the retroviral method of gene transfer. 5 + 10

8. What is an animal clone ? Discuss how the first mammalian clone was produced. What is the molecular mechanism behind the conversion of fully differentiated somatic cell into a complete new animal ?

9. What is coccidiosis ? In which animals this disease is common ? What is precocious development ? In which parasites it can be used ? Name two types of vaccination procedure against coccidiosis. Nam four important biotechnological tools used for diagnosis of Theileriosis. 2 + 1 + 2 + 1 + 2 + 7

10. What do you mean by gene therapy ? What are the different forms of gene therapies ? Which viral and non-viral vectors are used in gene therapy ? From which part of the human body, bone marrow cells are removed to perform ex vivo SCID gene therapy ? Write in brief about gene therapy in SCID. 2 + 2 + 4 + 1 + 6

11. Describe the procedure of using ES cells for producing transgenic mice and micro propagation for producing transgenic chicken. Mention two uses of transgenic mice and transgenic chicken. 5 + 5 + 3 + 2

END