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Seat Number: _____ No. of Printed Pages: 2

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SARDAR PATEL UNIVERSITY

M. Sc. (Genetics) – Fourth Semester Examination (CBCS)

Monday, 9th April, 2018

10:00 a.m. to 1:00 p.m.

PS04CGEN01: Animal Genetics

Total Marks: 70

Note: (1) Figures to the right indicate marks.
(2) Draw a neat and labeled diagram, wherever necessary.

Q-1 **Choose the most appropriate answer from the four alternatives given:** **[08]**

i. **As per the latest information, there are .....breeds of cattle in India.**

(a) 37 (b) 39 (c) 41 (d) 38

ii. **In cattle and buffalo, the female and male animal is known as.... & .....respectively.**

(a) Dam and sire (b) Sire and dam

(c) Dam and calf (d) Bull and daughter

iii. **Which one of the following is a Asia's largest semen production station.....**

(a) IIL, Hyderabad (b) IVRI, Izatnagar (c) SAG, Bidaj (d) NDRI, Karnal

iv. **.....is a standard method for the production of complex glycosylated proteins.**

(a) Pichia (b) Baculo virus (c) *E. coli* (d) Cell tissue culture

v. **..... is a world's first company to clone trio of goats and developed BELE goats.**

(a) Medarex (b) Nexia (c) Kirin (d) Abgenix

vi. **Obtaining an organism that is genetically identical to the original organism is known as.....**

(a) Cloning (b) Transgenics (c) Chimera (d) Cell tissue culture

vii. **Urokinase used for blood clot dissolution produced from transgenic.....**

(a) Mouse (b) Pig (c) Cow (d) Goat

viii. **Match the following and choose correct answer from the codes given below:**

A. Horse	1. Canine
B. Sheep	2. Caprine
C. Goat	3. Equine
D. Dog	4. Bovine
	5. Ovine

	A	B	C	D
(a)	1	2	3	4
(b)	2	4	1	3
(c)	3	5	2	1
(d)	4	3	1	2

P.T.O.

Q-2 Answer any SEVEN from the following: **[14]**

1. Write differences between polygyny and polyandry.
2. Give an overview of tissue dissociation during fibroblast culturing.
3. Enlist 4 major types of buffalo breeds.
4. Diagrammatically show effect of Genetic diseases in animals.
5. Write mutation that lead to factor XI deficiency in dairy animals.
6. Define the terms transgene and transgenics.
7. Name companies producing therapeutic proteins from transgenic animals.
8. Write applications of transgenic mice.
9. Explain animals engineered as a source of transplant organs.

Q-3 A. Enlist various banding techniques. Describe GTG banding in detail. **[06]**

B. Enlist numerical and structural chromosomal abnormalities of the cattle and buffaloes. **[06]**

OR

B. **Write short notes on the following:**

(1). Robertsonian translocation (2). Comparative cytogenetics. **[3+3]**

Q-4 A. Give detail account of parentage verification in dairy animals. **[06]**

B. Name genetic disorders of HF. Discuss Bovine leukocyte adhesion deficiency syndrome. **[06]**

OR

B. Describe sign, symptoms and diagnostic technique for bovine citrullinaemia, **[06]**

Q-5 A. Explain production of therapeutic proteins from the transgenic animals. **[06]**

B. Describe technique for the production of somato-transgenic animals. **[06]**

OR

B. **Answer the following:**

(1). Give an overview of main categories of vaccines. **[03]**

(2). What are the advantages and disadvantages of killed vaccine. **[03]**

Q-6 A. Explain gene transfer by microinjection technique. **[06]**

B. Describe the gene transfer with retro-viral vector assistance. **[06]**

OR

B. Explain gene transfer through production of germ line chimeras. **[06]**

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