

(110)

SARDAR PATEL UNIVERSITY
M. Sc. (Genetics) – Fourth Semester Examination (CBCS)
Monday, 10th April, 2017
2:00 p.m. to 5:00 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 arebreeds of cattle in India.**
 (a) 37 (b) 39 (c) 41 (d) 38
- ii. Which one of the following is a Asia's largest semen production station.....**
 (a) IIL, Hyderabad (b) SAG, Bidaj (c) IVRI, Izatnagar (d) NDRI, Karnal
- iii. Match the following and choose correct answer from the codes given below:**
- | | |
|--------------|---------------|
| A. Karnataka | 1. Vechur |
| B. Gujarat | 2. Rathi |
| C. Kerala | 3. Amritmahal |
| D. Rajasthan | 4. Gir |
| | 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 |
- iv. When bulls are evaluated on the basis of their daughters performance then the technique is known as**
 (a) Artificial insemination (b) *In vitro* fertilization
 (c) Progeny testing (d) Parentage verification
- v. Mc Clenaghan and Clark (1987) achieved the expression of human.....in the milk of transgenic mice.**
 (a) Goat (b) Sheep (c) Mice (d) Cow
- vi. Injection of lambs with growth hormone increases feed efficiency and decreases thecontent of the carcass.**
 (a) Protein (b) Fat (c) Carbohydrate (d) Vitamin
- vii. Splitting of embryos in 1978 was done by.....**
 (a) Moustafa (b) Hahn (c) Both (d) Mc Clenaghan and Clark
- viii. First successful embryo transfer in rabbits was done by.....in 1890.**
 (a) Heape (b) Casida (c) Nicholas (d) Vitamin

P.T.O.

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

1. Write name and source of any 2 mitogenic agents used for cattle chromosomes preparation.
2. Write four major types of Indian buffalo breeds.
3. Diagrammatically show effect of Genetic diseases in dairy animals.
4. Differentiate between selective breeding and cross breeding.
5. Give full names of MoMuLV and MOET.
6. Differentiate between live and killed vaccines.
7. Define the terms transgene and transgenic.
8. Write advantages and disadvantages of retroviral based gene transfer method.
9. What is somatotransgenic?

-)-3 A. Enlist various structural abnormalities in dairy cattle. Describe centromeric banding in detail. [06]**
B. What are the different banding techniques? Explain centric fusion translocation in detail. [06]

OR

- B. Enlist various numerical abnormalities in dairy buffalo and explain any two of them in detail. [06]**

-)-4 A. Enlist various methods for embryo sexing. Give a detailed account on BLAD. [06]**
B. Discuss progeny testing technique for the genetic improvement of dairy animals. [06]

OR

B. Write short notes on the following:

- (a) DUMPS (b) Importance of parentage varification in cattle and buffaloes [03+ 03]**

-)-5 A. What is Animal pharming? Mention its future scope. [06]**
B. What are vaccines? Mention the components of vaccines. Also mention various generations of vaccines with suitable examples. [06]

OR

- B. Explain the process of production of transgenic cattle by pronuclear injection. [06]**

-)-6 A. Write a note on gene transfer by microinjection. [06]**
B. Mention objectives and applications of embryo transplantation. [06]

OR

- B. What are the factors that influence the superovulatory response? [06]**
