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Seat Number: _____

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SARDAR PATEL UNIVERSITY
M. Sc. (Genetics) – Fourth Semester Examination (CBCS)
Wednesday, 20th March, 2019
10:00 a.m. to 1:00 p.m.

PS04CGEN22: Animal Genetics and Genetic Counseling

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. In cattle and buffalo, the male and female animal is known as..... &respectively.
(a) Dam and sire (b) Sire and dam
(c) Dam and calf (d) Bull and Cow
- ii. The temperature of water jacket of artificial vagina is
(a) 37° C (b) 45° C (c) 40° C (d) 52° C
- iii. The number of available fertilized eggs that are used in microinjection are derived through the process called as.....
(a) *In vitro* fertilization (b) Superovulation (c) Oestrus cycle (d) Artificial insemination
- iv. When liposomes used for transfection, the method is known as.....
(a) Lipofection (b) Lipoduction (c) Lysoginization (d) Lipoplexes
- v. is not a model for abnormal Behavior?
(a) Statistical Model (b) Court Model
(c) Sociological and Psychological Model (d) Physiological or Biological Model
- vi.theorem is very useful in Genetic counseling/screening.
(a) Medarex (b) Nexia (c) Kirin (d) Thomas Bayes
- vii.should be clearly indicated with arrow.
(a) Proband (b) Propositus (c) Both a and b (d) Deceased
- viii. Special problem in genetic counseling includes.....
(a) Consanguinity and Incest (b) Adoption and genetic disorders
(c) Disputed Paternity (d) All of these

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

1. Write examples of cryoprotectant used for germ cell storage.
2. Enlist most common genetic diseases of cattle.
3. Name structural chromosomal abnormalities found in buffaloes.

(P.T.O.)

4. Define the terms transgene and transgenics.
5. Write various physical methods for the transfer of gene.
6. What is genetic counseling?
7. Name Non – clinical genetic counsellor work settings.
8. What are triple tests? Write its importance in genetic counseling?
9. Who are the providers of genetic counseling?

Q-3 A. Write short notes on the following:

(1). Bovine citrullinemia [03]

(2). Define the terms Mixoploidy, chimerism and polyandry. [03]

B. Enlist various banding techniques. Describe Giemsa banding in detail. [06]

OR

B. Write short notes on the following:

(1). Artificial insemination [3]

(2). Progeny testing [3]

Q-4 A. Discuss applications of Transgenic animal technology. [06]

B. Describe chemical based methods for the gene transfer in animals. [06]

OR

B. Write short notes on the following:

(1) Transgenic mice. [3]

(2) Viral mediated gene transfer [3]

Q-5 A. Enlist various steps in genetic counseling. Explain most crucial step in any genetic counseling. [06]

B. Give an overview of risk evaluation during genetic counselling. [06]

OR

B. What are the common ethical issues for families. [06]

Q-6 A. By giving suitable examples explain indications for Prenatal genetic counseling. [06]

B. By giving suitable examples explain Indications for Adult genetic counseling. [06]

OR

B. Enlist invasive tests for prenatal diagnosis of genetic diseases. Explain any one of them in detail. [06]

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