

This question paper contains 4+2 printed pages]

CODE : FRO-2017

VETERINARY SCIENCE

Roll No.

Time : 3 Hours

Maximum Marks : 200

Note :— (i) Question paper consists of *two* parts viz. Part I and Part II. Each part contains *four* questions. The paper as a whole carries eight questions. Question Nos. 1 and 5 are compulsory. The candidates are required to attempt *three* more questions out of the remaining *six* questions taking at least *one* question from each part *i.e.*, this is in addition to the compulsory question of each part. Attempt *five* questions in all. All questions carry equal marks. The parts of a question are to be attempt at one place in continuation. Answers should be brief and to the point.

(ii) Parts of same question must be attempted together and not to be attempted in between the answers to other questions.

P.T.O.

Part-I

1. I. Define Energy. Compare the nutrients requirement in dry and milking cows. Write the limitations of various feed systems. 20
- II. Write short notes on the following : 5×4=20
 - (a) Protein metabolism and Protein biosynthesis
 - (b) Silvipasture
 - (c) Effect of different protein to energy ratio on the growth performance of animals
 - (d) Role of growth hormones in improving animal production
2. I. Explain the process of digestion in ruminants. Also explain the process of absorption in animals. 20
- II. Write short notes on the following : 5×4=20
 - (a) NPN compounds as ruminant feed
 - (b) Vitamins and minerals interrelationship
 - (c) Major and Trace elements
 - (d) Spermatogenesis and Ovulation

3. I. Explain Pasteurized, Homogenized and Soft curd milk. What is the major difference between Flavoured milk and Flavoured drink ? Differentiate the raw milk, human milk, sterilized milk and pasteurized milk on the basis of their curd tension and also write which among the above mentioned is most suited for infant consumption. 20
- II. Write short notes on the following : 5×4=20
- (a) Agmark, HACCP and ISI
 - (b) CIP
 - (c) MAP and Vacuum packaging
 - (d) Differentiate cow and buffalo milk under the following points : Buffer value, Viscosity, Phosphatase value, Surface tension.
4. I. What are factors affecting semen preservation ? Explain Flushing in sheep and goat. Explain the factors responsible for proper incubation of egg.

20

P.T.O.

II. Write short notes on the following : $5 \times 4 = 20$

- (a) Write the function of the Fallopian tubes and the uterus with respect to female reproductive tract.
- (b) Current status of organized dairy farming in India.
- (c) Write different measures of protein quality for monogastric animals.
- (d) Explain the forage demand and supply scenario in India.

Part-II

5. I. Write Fisher's theorem of natural selection. What is Hardy-Weinberg law ? Also write its application to cases to complete dominance. 20

II. Write short notes on the following : $5 \times 4 = 20$

- (a) Heritability and repeatability. Also write ways to improve heritability and repeatability.
- (b) Write about genome size and number of genes. Is genome size depending on the number of genes ?

- (c) Define additive genetic variance, dominance variance and epistatic variance.
- (d) Define gene frequency. Also explain factors affecting gene frequency.
6. I. What is nonrandom mating system ? Write its effect on the rate of approach to homozygosity. 20
- II. Write short notes on the following : 5×5=20
- (a) Inbreeding, outbreeding and their uses.
- (b) Explain General and Specific combining ability.
- (c) Independent method of selection and Independent culling level.
- (d) Explain the factors governing the rate of genetic change.
7. I. Write about the following term : Theoretical pharmacology, Posology and Pharmacognosy. Explain therapeutic drug monitoring. 20

II. Write short notes on the following : 5×4=20

- (a) Antemortem inspection and Postmortem inspection
- (b) Zoonosis, its types with example
- (c) Duties and role of Veterinarians of a slaughter house
- (d) Write *five* bacterial diseases of Farm animals with their causative agent.

8. I. Define extension. Write the difference between university education and extension education. Explain *two* important methods adopted to educate farmers under rural conditions. 20

II. Write short notes on the following : 5×4=20

- (a) Effects of milk handling on quality and hygiene
- (b) Methods for treatment of byproducts contaminated with toxic or harmful substances
- (c) Vet-hygiene with respect to water and air
- (d) Immunity, Innate and Adaptive immunity.