

## ANIMAL HUSBANDRY AND VETERINARY SCIENCE

### Paper I

(CONVENTIONAL)

Time allowed : Three Hours

Maximum Marks : 200

#### Question Paper Specific Instructions

Please read each of the following instructions carefully before attempting questions :

There are **EIGHT** questions in all, out of which **FIVE** are to be attempted.

Questions no. **1** and **5** are compulsory. Out of the remaining **SIX** questions, **THREE** are to be attempted selecting at least **ONE** question from each of the two Sections **A** and **B**.

Attempts of questions shall be counted in chronological order. Unless struck off, attempt of a question shall be counted even if attempted partly. Any page or portion of the page left blank in the Answer Book must be clearly struck off.

All questions carry equal marks. The number of marks carried by a question / part is indicated against it.

Answers must be written in **ENGLISH** only.

Neat sketches may be drawn, wherever required.

#### SECTION A

- Q.1.** Write short notes on the following : 8×5=40
- (a) Hormonal regulation of mammary gland development, milk secretion and ejection. 8
  - (b) Significance of artificial insemination and embryo-transfer technology. 8
  - (c) Molecular basis of Mendelian inheritance patterns. 8
  - (d) Different factors that determine the egg size in poultry. 8
  - (e) Formation of male and female gametes. 8
- Q.2.** Discuss various factors that determine the digestibility of fodder in ruminants. What role is played by rumen microflora in this process ? What are the principal metabolites produced in the rumen and what is their significance ? 40
- Q.3.** (a) Lipids are an excellent source of energy. Why, then, are carbohydrates also included in the diet ? In addition to the source of energy, what other roles are played by the lipids in body metabolism ? 10+10
- (b) What are the various factors that contribute to the biological value of a protein ? Why can ruminants manage with low biological value proteins ? 20
- Q.4.** (a) Draw strategies for feeding and keeping of animals under natural calamities such as flood and drought. 20
- (b) How is milk composition influenced by the diet of the animal ? What measures should be undertaken to optimize the milk yield and quality ? 20

**SECTION B**

- Q.5.** Differentiate between the following : 8×5=40
- (a) Apparent vs. True digestibility 8
  - (b) Maintenance energy vs. Production energy 8
  - (c) Induced vs. Spontaneous mutations 8
  - (d) Quantitative vs. Qualitative traits 8
  - (e) Inbreeding vs. Outbreeding 8
- Q.6.** Define the term Vitamin. Enlist all fat soluble vitamin requirements of animals and poultry. Briefly discuss structure, functions, deficiency symptoms and toxicity of Vitamin A and Vitamin E. 40
- Q.7.** What do you understand by cross breeding ? How has it influenced the productivity of animals ? Briefly discuss the advantages and disadvantages of cross breeding. 40
- Q.8.**
- (a) How do the nutritional requirements of ruminants and non-ruminants differ from each other ? 15
  - (b) What changes in the diet are required as a buffalo progresses from pregnancy to parturition and eventually to lactation ? Justify your answer with the changes that occur in metabolism during these stages. 25