

## ANIMAL HUSBANDRY AND VETERINARY SCIENCE

## Paper – I

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 sequential 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 Question-cum-Answer Booklet 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

**Q1. Write short notes on the following :**

**8×5=40**

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|--|---|
| (a) Effective Population Size                                      | 8 |
| (b) Composition of Bovine Semen                                    | 8 |
| (c) Importance of Protein Quality in the Diets of Poultry and Pigs | 8 |
| (d) Total Digestible Nutrients                                     | 8 |
| (e) Role of Manager in a Dairy Farm                                | 8 |

- Q2.** (a) Enumerate the fat-soluble and water-soluble vitamins. Write the coenzymes or prosthetic groups of B vitamins and their enzymic or other functions. Write the inter-relationship between minerals and vitamins. 25
- (b) What are the different measures of energy for ruminants ? Write the merits and demerits of starch equivalent and biological value in evaluating the feeds. 15
- Q3.** (a) What do you mean by 'Breeding Value' ? Discuss the role of breeding value in animal breeding programmes. 20
- (b) What is 'Selection' ? Write the importance of selection in improving milk production in dairy animals. Discuss the various methods of selection along with their advantages and disadvantages. 20
- Q4.** (a) Discuss the various phases of Estrous Cycle and average times of reproductive parameters in cows. 15
- (b) How does the development of mammary glands occur during post-natal life in a heifer or cow ? Support your answer with the physiological role of hormones involved in mammogenesis, lactogenesis and galactopoiesis. 25

## SECTION B

- Q5. Differentiate between the following :** **8×5=40**
- (a) Megaloblastic anaemia and Pernicious anaemia 8
  - (b) Steaming-up and Flushing 8
  - (c) Enzymic digestion and Microbial fermentation 8
  - (d) Adaptation to cold stress and Adaptation to heat stress 8
  - (e) Sex influenced and Sex limited characters 8
- Q6.** (a) What do you understand by Commercial Dairy Farming ? Give a plan to begin a commercial dairy farm comprising of 200 Sahiwal cows. 20
- (b) Explain the term 'Natural Disasters'. How can the livestock be saved during natural calamities ? Discuss the feeding and managerial practices under such situations. 20
- Q7.** (a) What do you mean by Carbon-Nitrogen Balance ? Give the significance of carbon-nitrogen balance studies in animals. Write the merits and demerits of carbon-nitrogen balance in comparison to comparative slaughter technique and respiratory quotient. 20
- (b) Prepare a feeding schedule for a crossbred cow weighing 400 kg and yielding 10 kg milk daily with 4% fat from green berseem (DCP 2%, TDN 12% and DM 20%), wheat straw (DCP 0%, TDN 40% and DM 90%) and concentrate mixture (DCP 12%, TDN 70% and DM 90%). The maintenance requirement is 250 g DCP and 3.25 kg TDN, whereas requirement for 1 kg milk production is 45 g DCP and 300 g TDN. 20
- Q8.** (a) What is Genotype-Environment Interaction ? Write the practical utility of genotype-environment interaction in animal production. 20
- (b) What points will you consider while formulating an economic ration for a lactating buffalo ? How will you prepare an economic ration for finishing pigs ? 20

