

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.

Neat sketches may be drawn, wherever required.

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

SECTION A

Q1. Write short notes on the following :

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| (a) | Energy-protein ratio in poultry ration | 8 |
| (b) | Growth stimulating substances in animal feeds | 8 |
| (c) | Role of balanced ration in animal nutrition | 8 |
| (d) | Sigmoid growth curve in animals | 8 |
| (e) | Factors affecting semen quality | 8 |

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- Q2.** (a) Describe the role of vitamins in metabolic activities of animals. 15
- (b) What are the requirements of starter and finisher ration for broilers ? 10
- (c) Explain the inter-relationship of sulphur, molybdenum and copper in affecting animal body functions. 15
- Q3.** (a) Discuss the nutritional strategies in pigs for production of lean meat. 10
- (b) Describe the hormonal control of mammary gland development, milk secretion and milk ejection in cows. 15
- (c) What is adaptation ? Describe the mechanism of natural adaptations in animals. 15
- Q4.** (a) Describe various methods of controlling heat stress in buffaloes. 15
- (b) Describe the importance of semen dilution. Write down the specific functions of glucose, egg yolk, buffers, antibiotics, glycerol and fructose in an ideal semen diluent. 15
- (c) Discuss detection of oestrus and optimization of time of insemination for better conception. 10

SECTION B

- Q5. What are the similarities and differences between the following ?**
- (a) Recurring and Non-recurring Expenditure in dairy farming 8
 - (b) Linkage and Crossing Over 8
 - (c) Qualitative and Quantitative Traits 8
 - (d) Hay and Silage 8
 - (e) Milk Replacer and Starter Ration for pigs 8
- Q6. (a) What are the different methods of estimation of heritability ? List down the advantages and disadvantages of each method. 15**
- (b) Briefly describe individual, pedigree, family and within family selection. In which situation, can each of them be used ? 15
 - (c) What are the merits and demerits of tandem selection, independent culling level and selection index in dairy cattle breeding ? 10
- Q7. (a) State the Hardy-Weinberg law and describe the factors influencing it. 20**
- (b) Describe the components of phenotypic value of a trait. 10
 - (c) How can the breeding value of a trait be estimated ? 10
- Q8. (a) What do you understand by commercial dairy farming ? Describe the different components of commercial dairy farming. In what way is dairy farming in India different from that of developed countries ? Explain. 15**
- (b) How will you manage the scarcity of fodders during natural calamities ? 10
 - (c) Describe the importance of feed additives in poultry ration. Classify the feed additives frequently utilized by poultry farmers for commercial poultry production. Describe the role of antioxidants as a feed additive. 15

