

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) | Enzymatic and Microbial digestion in ruminants | 8 |
| (b) | Concept and benefits of bypass protein | 8 |
| (c) | Basal metabolic rate and Fasting metabolism in ruminants | 8 |
| (d) | Hormonal control of estrous cycle in buffaloes | 8 |
| (e) | Nutrient requirement for maximum growth in starter, grower and finisher broilers | 8 |



- Q2.** (a) Write the general functions of minerals in animal body. Give the inter-relationship of minerals with vitamins. 15
- (b) How would you prepare a balanced ration ? Discuss various nutritional requirements for better maintenance and quality semen production in bulls. 15
- (c) Write different energy sources for production of milk, meat, eggs and wool. Also discuss various systems of expressing energy values in different feeds. 10
- Q3.** (a) Enumerate fat-soluble vitamins. Also write their sources, functions and deficiency symptoms in poultry. 10
- (b) Discuss various feeding systems in detail and also write their limitations in buffaloes. 15
- (c) Write about various hormones secreted from male and female reproductive organs in animals, with their nature, precursors and functions. 15
- Q4.** (a) Discuss in detail the effect of environmental pollution and stress on animal health and production. 10
- (b) Write in detail the various freezing techniques of semen. Discuss the role of AI in cattle. 10
- (c) (i) Describe growth curve in animals. Discuss different phases of growth curve. Write briefly the factors which affect growth. 10
- (ii) Write various parts of digestive system of pigs. How is the digestive system of pigs different from ruminants ? 10

SECTION B

- Q5.** Write short notes on the following :
- (a) Genotype × environment correlation vs. Genotype × environment interaction 8
 - (b) Care and management of heifers on a dairy farm 8
 - (c) Feeding regimens for meat and wool production in rabbits 8
 - (d) Sex-influenced and Sex-limited characteristics 8
 - (e) Path coefficient theory and Path coefficient analysis 8
- Q6.**
- (a) Elucidate different types of inbreeding. Write different methods for estimating inbreeding, with its merits and demerits in cattle. 15
 - (b) Explain recombinant DNA technology. What are the methods, steps and examples of this technology ? 15
 - (c) Classify breeding systems. Discuss genotypic and phenotypic consequences of outbreeding. 10
- Q7.**
- (a) Discuss the role of dairy manager in a dairy farm alongwith personnel, financial and feeding management of a commercial dairy farm. 15
 - (b) Discuss the measures for prevention of mortality and morbidity of livestock during natural calamities and rehabilitation thereafter. 10
 - (c) How can a good herd of dairy cattle be maintained scientifically and economically ? Also suggest various measures to be adopted if such herd is located in hot and humid area. 15
- Q8.**
- (a) What is genetic mutation? Discuss in brief the types, effects, merits and demerits of mutation on livestock population. 15
 - (b) What do you mean by sire index ? What are the different aids used in the selection of breeding bulls ? Describe the basis of selection and methods of selection. 15
 - (c) How is livestock farming useful in providing self-employment to rural youth ? Describe different types of opportunities in this sector which can be exploited by the youth. How can green fodder production be exploited as an income generating activity by rural youth ? 10



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