

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 $\times$ environment correlation vs. Genotype $\times$ 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

