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 :

(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*