ANIMAL HUSBANDRY AND VETERINARY SCIENCE  
Paper – I

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.

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**SECTION A**

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

(a) Role of microbes in rumen fermentation  
(b) Factors affecting absorption of calcium  
(c) Environmental factors affecting animal behaviour  
(d) Hormonal control of milk ejection in buffalo  
(e) Inter-relationship between muscle composition and meat quality  

8x5=40
Q2. (a) What you mean by balanced ration and what are its characteristics? How will you formulate the ration for lactating cattle and buffaloes?  
(b) Give the feeding schedules for growing and finishing pigs.  
(c) Write about the protein and energy requirements for starters, growers and layers of white leghorn birds.

Q3. (a) Describe the various systems of expressing energy values of feeds. Explain in detail about the importance of Total Digestible Nutrients (TDN) of a feedstuff.  
(b) Explain the roles of iron and zinc in animal nutrition.  
(c) What are the major constituents of semen extenders? Discuss about commonly used semen extenders for dilution of semen.

Q4. (a) Draw a labelled diagram of the digestive system of cow along with associative organs and their functions.  
(b) Describe the influence of external factors on growth and development of ruminants.  
(c) Explain various factors affecting survival and quality of spermatozoa during semen handling.
SECTION B

Q5. Write short notes on the following: 8x5=40
(a) Characteristics of genetic code 8
(b) Problems encountered in the development of inbred lines 8
(c) What are the necessities for developing synthetic breeds of animals and explain the stepwise procedure for formation of the same 8
(d) Feeding habits of goats 8
(e) Factors affecting egg size in poultry 8

Q6. (a) Describe in brief the population and its various types. Give the contrasting differences between an individual and a population. 10+10=20
(b) Explain the mechanism of sex determination in farm animals. 10
(c) Explain the improved management practices for profitable pig production. 10

Q7. (a) How is recombinant DNA technology different from conventional breeding? Write in brief about the other two main technologies which form the primary basis of recombinant DNA technology. 8+12=20
(b) What do you mean by selection differential and generation interval? What determines their sizes? 10
(c) Write about the characteristics and practical application of path coefficients. 10

Q8. (a) Discuss the essential factors to be considered while establishing a dairy farm. 15
(b) Describe the management practices for maximum reproductive efficiency of buffaloes. 15
(c) Explain the terms — Calf starter, Dry calf starter, Milk substitute and Milk replacer. Give a representative composition of Calf starter. 2x5=10

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