

ANIMAL HUSBANDRY AND VETERINARY SCIENCE
(Paper I)

Time Allowed : Three Hours

Maximum Marks : 300

QUESTION PAPER SPECIFIC INSTRUCTIONS

(Please read each of the following instructions carefully before attempting questions)

There are EIGHT questions divided in two Sections.

Candidate has to attempt FIVE questions in all.

Question Nos. 1 and 5 are compulsory and out of the remaining, any THREE are to be attempted choosing at least ONE question from each Section.

The number of marks carried by a question/part is indicated against it.

Wherever any assumptions are made for answering a question, they must be clearly indicated.

Word limit in questions, wherever specified, should be adhered to.

SECTION 'A'

1. Write short notes on any five of the following in about 150 words each: **12×5=60**
- (a) Utilisation of non-protein nitrogen compounds in cow
 - (b) Role of modified fat in ruminants' diet
 - (c) Mechanism of body defence against extreme cold and heat in cross-bred cows
 - (d) Phenotypic consequences of chromosomes mutation/aberrations
 - (e) Heritability estimate in the broad sense as different from heritability estimate in the narrow sense
 - (f) Principles of clean milk production
2. (a) Which modern feeding standard would you recommend while formulating rations for high yielding cross-bred cows, giving full justification for its adoption under Indian context? **20**
- (b) Explain the relative differences that exist with respect to dietary essentiality of different vitamins between polygastric and mono-gastric livestock species. **20**
- (c) How does interaction that inherently exists between and among different mineral sources induce mineral imbalances, deficiencies and toxicities in different livestock species? Furnish relevant examples to substantiate your answer. **20**
3. (a) Describe the metabolic alkalosis in cow. Also discuss the process of diffusion for the exchange of oxygen and carbon dioxide between alveolus and pulmonary capillary blood. **30**
- (b) Elaborate the usefulness of "Swarnjayanti Gram Swarozgar Yojana" in social mobilisation of rural poor into Self-Help Groups, and in setting up of micro-enterprises. **30**
4. (a) State the steps involved in embryo transfer technology and its applications. **30**
- (b) What are the BIS specifications for starter, grower and finisher pig in terms of CP and ME? **5**
- (c) What is synchronisation of estrus? How is it beneficial for livestock farming? Briefly discuss the concept of MOET. **25**

SECTION 'B'

5. Write short notes on any five of the following in about 150 words each: **12×5=60**
- (a) Importance of hay and silage in livestock feeding

- (b) Livestock records and their importance
- (c) Summer anestrus in buffaloes
- (d) Significance of bio-gas technology
- (e) Factors affecting the altering genetic structure of population
- (f) Blood groups characters in cattle
6. Differentiate between the following (any five) in about 150 words each: **12×5=60**
- (a) Qualitative versus Quantitative traits
- (b) Cytogenetics versus Molecular genetics
- (c) Sex influenced versus Sex limited traits
- (d) Genetic assortative versus Genetic disassortative mating
- (e) Production traits versus Reproduction traits
- (f) Tandem method of selection versus Selection index
7. (a) What is the main effect of inbreeding? Does inbreeding as such increase the frequency of recessive genes? Explain. **15**
- (b) Why do breeders in general, try to avoid inbreeding? **15**
- (c) Illustrate with example how the genetic effect of inbreeding by using pair of genes ('A' for dominant; 'a' for recessive allele) increases the homozygosity and decreases the heterozygosity in four generations by assuming that parent generation contains 1600 heterozygous individuals. **30**
8. (a) Describe the care and management of heifers on a dairy farm. **20**
- (b) Dairy bull is considered as half the herd. – Justify the statement. **20**
- (c) Enumerate the managerial practices for breeding bulls. **20**