

ANIMAL HUSBANDRY AND VETERINARY SCIENCE (Paper I)

Time Allowed : Three Hours

Maximum Marks : 250

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.

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.

SECTION 'A'

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| 1. | (a) | Describe mechanism by which animals adapt to cold stress. | 10 |
| | (b) | Explain mammary involution. What changes are highlighted during this process? | 10 |
| | (c) | Discuss the nutrient requirements of poultry for Meat and Egg production. | 10 |
| | (d) | Describe factors determining efficiency of traits of economic importance in dairy animals. | 10 |
| | (e) | What is meant by Cyber Extension? Discuss its application in animal husbandry and its importance in Indian context. | 10 |
| 2. | (a) | Discuss milk pricing policy with respect to the producers. | 10 |
| | (b) | Define Heritability. Discuss any one method used for its estimation. How are the estimates useful in animal breeding? | 15 |
| | (c) | Describe different hormones of adrenal cortex and their physiological functions. | 15 |
| | (d) | Discuss processing methods for roughage to improve its utilization by animals. | 10 |
| 3. | (a) | Derive the formulae for estimation of genotypic values and breeding values in a single locus two allele case. Write the partitioning of variation and explain how the components of variance are affected by degree of dominance. | 20 |
| | (b) | Discuss complete feeding system for dairy farms. | 15 |
| | (c) | Define anticoagulants and describe their mode of action and practical applications. | 15 |
| 4. | (a) | What is the status of meat production in India? What variables need to be considered while starting a commercial broiler farm and why? | 15 |
| | (b) | Enlist the characteristics of a semen diluter. Calculate the dilution rate of semen with following information available: (i) Semen to be frozen in French mini straws. (ii) Semen volume: 5 ml (iii) Sperm concentration in neat semen: 1000 million/ml (iv) Initial motility: 70%. | 10 |
| | (c) | Explain the law of Independent Assortment given by Mendel with suitable examples taking dihybrid cross. Describe briefly the deviations from Mendelian Genetics. | 15 |
| | (d) | Discuss the interrelationship of sulphur, molybdenum and copper in affecting the body functions. | 10 |

SECTION 'B'

5.	(a)	Describe biochemical tests for urinary dysfunction.	10
	(b)	Discuss role of multiple measurements in animal breeding.	10
	(c)	Explain 'Inbreeding'. Discuss disadvantages of inbreeding.	10
	(d)	Describe categories of livestock farm labour and discuss ways to improve their efficiency.	10
	(e)	Describe process of spermatogenesis in bovine.	10
6.	(a)	What do you understand by feed supplements and feed additives? Describe various groups of additives used in animal feed.	20
	(b)	What is the current status of egg production in India? What management practices are followed in raising a flock of layer birds from day old chicks?	15
	(c)	Enlist various causes of anoestrus in bovines and discuss its remedial measures.	15
7.	(a)	What are the economic considerations in livestock farming in India? Discuss.	10
	(b)	When natural calamities strike, what strategy needs to be adopted for livestock management in the affected areas? What preventive measures could be taken to minimize losses from such calamities?	15
	(c)	What is NPN compound? Write the mechanism of NPN utilization in ruminants.	10
	(d)	Discuss progeny testing. What precautions are needed for effective progeny testing programme and why?	15
8.	(a)	A farmer, who has sufficient agricultural land, wishes to establish a dairy farm with 10 cattle. Suggest how he should prepare the budget estimates for his dairy farm listing all items/parameters he must consider with justification.	20
	(b)	Differentiate between qualitative and quantitative traits. Derive the formulae for explaining change of gene frequency due to immigration, recurrent mutation and selection of recessive homozygotes when there is complete dominance.	20
	(c)	Discuss scientific practices for management of young buffalo calves from birth to 3 months of age.	10