

PAPER – V: Introductory Animal Breeding and Genetics

Semester I

Name of the Course: Introductory Animal Genetics
Course No. AHD-151; Cr. Hrs. 2 (1+1)

Theory

1. Heredity and variation – definition and classification etc.
2. Chemical basis of DNA – structure and transformation of DNA
3. Basic concepts of genetics and reproduction
 - a. Cell division – mitosis and meiosis
 - b. Linkage and crossing over
 - c. Mendelian principles of inheritance – monohybrid and dihybrid inheritance
 - d. Modification in monohybrid and dihybrid mendelian ratio
 - e. Number and types of chromosomes in livestock and poultry
 - f. Multiple alleles
 - g. Mutation – its types, effects and mutagenic agent
4. Sexual heredity
 - a. Homologous, heterologous
 - b. Sex determination
 - c. Sex linked, sex influenced and sex limited inheritance

Practical

1. Gametogenesis, cell structure
2. Problems based on monohybrid and dihybrid inheritance
3. Basic statistical principles – estimation of mean, variance, standard deviation and standard error

Semester II

Name of the Course: Introductory Animal Breeding
Course No. AHD-152; Cr. Hrs. 2 (1+1)

Theory

1. Breeding rules
 - a. Inbreeding – types, uses, genetic and phenotypic effects
 - b. Out breeding - types, uses, genetic and phenotypic effects
 - c. Selective breeding
 - d. Livestock breeding strategies in Rajasthan
 - e. Selection and culling
 - f. Basis and types of selection
2. Techniques to improve performance
3. Importance and maintenance of pedigree record, progeny record and breeding record

Practical

1. Estimation of inbreeding coefficient
2. Estimation of relationship coefficient
3. Pedigree and breeding records
4. Basic computer operative principles