

ZOOLOGY Paper-I (ZOO-601)

(Genetics)

Time Allowed : 3 Hours

Maximum Marks : 36

Note : Attempt one question from each of Units I to IV. Question No. 1 is compulsory.

1. Write short answers :

- (a) Qualitative characters
- (b) Pleiotropic genes
- (c) Wobble hypothesis
- (d) Differences between DNA and RNA
- (e) Spontaneous and induced mutations
- (f) Albinism
- (g) DNA fingerprinting
- (h) Plasmids

UNIT-I

2. Explain with an example the modified ratios of 9 : 6 : 1 instead of 9 : 3 : 3 : 1 in F₂ generation of a Mendelian cross.
3. What are multiple alleles ? Explain their inheritance with an example.

UNIT-II

4. What is crossing over ? Discuss cytological basis of crossing over.
5. Describe the process of protein synthesis in eukaryotes.

UNIT-III

6. Explain operon model of regulation of gene expression in prokaryotes.
7. What are Mutagens ? Describe different types of mutagens giving examples.

UNIT-IV

8. Explain process of genetic recombination through transduction.
9. Give applications of recombinant DNA in Medicine and Agriculture.