TKN/KS/16–5860

Fourth Semester B. Sc. Examination

BOTANY

Paper - II

(Genetics and Molecular Biology)

Time : Three Hours] [Max. Marks : 50

N. B. : (1) All questions are compulsory and carry equal marks.
(2) Draw well labelled diagrams and examples wherever necessary.

1. Write on :—
   (a) Coupling and repulsion theory of linkage. 5
   (b) Law of Independent assortment. 5

OR

Write short notes on :—
   (c) Law of segregation 2.5
   (d) Incomplete dominance 2.5
   (e) Complementary genes 2.5
   (f) Complete linkage. 2.5

2. Write on :—
   (a) Autopolyploidy and allopolyploidy 5
   (b) Deletion and duplication. 5

OR

Write short notes on :—
   (c) Copy choice theory of crossing over. 2.5
   (d) Inversion 2.5
   (e) Monosomics 2.5
   (f) Trisomics. 2.5

3. Write on :—
   (a) Watson and Crick model of DNA. 5
   (b) Physical and Chemical mutagens. 5

OR

Write short notes on :—
   (c) Substitution mutation 2.5
   (d) Excision repair mechanism 2.5
   (e) Semiconservative DNA replication (Diagrammatic representation) 2.5
   (f) Application of induced mutations in crop improvement. 2.5

4. Write on :—
   (a) Characteristics of genetic code 5
   (b) Lac operon model. 5

OR

Write short notes on :—

(c) t-RNA 2.5

(d) Transcription 2.5

(e) Split gene 2.5

(f) Repetitive DNA. 2.5

5. Write in **two** or **three** lines only (Any **ten**) (Diagrams are not necessary) :—

(a) Dominant epistasis

(b) Genotype

(c) Homozygous

(d) Translocation

(e) Nullisomics

(f) Tetrasomics

(g) DNA damage

(h) Spontaneous mutation

(i) Cistron

(j) Satellite DNA

(k) Overlapping gene

(l) Translation. 1x10=10