

KNT/KW/16/5145

Bachelor of Science (B.Sc.) Semester—IV (C.B.S.) Examination

BOTANY (Genetics and Molecular Biology)

Paper—II

Time : Three Hours]

[Maximum Marks : 50

N.B. :— (1) **ALL** questions are compulsory and carry equal marks.

(2) Illustrate your answers with suitable examples and diagrams wherever necessary.

1. Write notes on :

(a) Law of independent assortment

(b) Complementary genes.

5×2

OR

Write short notes on :

(c) Law of segregation

(d) Incomplete dominance

(e) Complete linkage

(f) Significance of linkage.

2.5×4

2. Write notes on :

(a) Polyploidy

(b) Breakage and Reunion theory of crossing over.

5×2

OR

Write short notes on :

(c) Duplication

(d) Significance of crossing over

(e) Inversion

(f) Trisomics.

2.5×4

3. Write notes on :

(a) Watson and Crick Model of DNA

(b) Application of induced mutations in crop improvement.

5×2

OR

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(Contd.)

Write short notes on :

- (c) Photoreactivation
- (d) Frame-shift mutation
- (e) Chemical mutagens
- (f) Excision repair.

2.5×4

4. Write notes on :

- (a) Lac Operon Model
- (b) Characteristics of Genetic Code.

5×2

OR

Write short notes on :

- (c) t-RNA
- (d) Split genes
- (e) Repetitive DNA.
- (f) Transcription.

2.5×4

5. Write in **two** or **three** lines on each (Any **TEN**) Diagrams are not necessary :

- (a) Dihybrid cross
- (b) Alleles
- (c) Dominant epistasis
- (d) Nullisomics
- (e) Deletion
- (f) Chiasmata
- (g) Spontaneous mutation
- (h) Okazaki fragments
- (i) Recon
- (j) Overlapping genes
- (k) Polysome
- (l) Satellite DNA.

1×10