

Bachelor of Science (B.Sc.) Semester-IV (C.B.S.) Examination**BOTANY (GENETICS & MOLECULAR BIOLOGY)****Paper-II****(New)**

Time : Three Hours]

[Maximum Marks : 50

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

(2) Illustrate your answers with well labelled diagrams and examples.

1. Write on :

(a) Incomplete linkage

(b) Law of independent assortment.

5×2

OR

Write short notes on :

(c) Incomplete dominance

(d) Law of segregation

(e) Dominant epistasis

(f) Coupling and repulsion theory of Linkage.

2.5×4

2. Write on :

(a) Autopolyploidy and its significance

(b) Translocation and Inversion.

5×2

OR

Write short notes on :

(c) Amphidiploidy

(d) Trisomics

(e) Breakage and reunion theory

(f) Duplication.

2.5×4

3. Write on :

(a) Semiconservative method of DNA replication

(b) Physical mutagens.

5×2

OR

Write short notes on :

(c) Watson and Crick model of DNA

(d) Applications of induced mutation

(e) Jumping genes

(f) Excision repair.

2.5×4

4. Write on :

- (a) Transcription
- (b) Lac-operon model.

5×2

OR

Write short notes on :

- (c) Wobble hypothesis
- (d) t-RNA
- (e) Initiation of polypeptide chain
- (f) Repetitive DNA.

2.5×4

5. Write in **two or three** lines only (any **ten**); diagrams are not necessary :

- (a) Dominance
- (b) Complementary genes
- (c) Monohybrid cross
- (d) Nullisomy
- (e) Deficiency
- (f) Crossing over
- (g) Cistron
- (h) Photoreactivation
- (i) Spontaneous mutation
- (j) Satellite DNA
- (k) Termination Codons
- (l) Anticodon.

1×10

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BOTANY (GENETICS & MOLECULAR BIOLOGY)

Paper-II

(Old)

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 draw well labelled diagrams wherever necessary.

1. Write on :

(a) Complementary genes

(b) Law of independent assortment.

5×2

OR

Write short notes on :

(c) Complete linkage

(d) Law of segregation

(e) Incomplete dominance

(f) Coupling and repulsion theory.

2.5×4

2. Write on :

(a) Polyploidy

(b) Theories of crossing over.

5×2

OR

Write short notes on :

(c) Duplication

(d) Inversion

(e) Trisomics

(f) Translocation.

2.5×4

3. Write on :

(a) Watson and Crick's model of DNA

(b) Application of induced mutations in crop improvement.

5×2

OR

Write short notes on :

(c) Chemical mutagens

(d) Overlapping genes

(e) Excision repair

(f) Substitution mutations.

2.5×4

4. Write on :

- (a) Translation
- (b) Lac operon model.

5×2

OR

Write short notes on :

- (c) Split gene
- (d) Repetitive DNA
- (e) Clover leaf model of t-RNA
- (f) Transcription.

2.5×4

5. Write in **two or three** lines only (any **ten**); diagrams are not necessary :

- (a) Dominance
- (b) Genotype
- (c) Epistasis
- (d) Aneuploidy
- (e) Deletion
- (f) Chiasmata
- (g) Frame-shift mutations
- (h) Photoreactivation
- (i) Okazaki fragments
- (j) Termination Codons
- (k) Wobble hypothesis
- (l) Codon.

1×10