

B.Sc. (Honours) Examination, 2019

Semester-VI

Botany

Paper- BBC- 61

(Cytology & Genetics)

Time: Three Hours

Full marks: 40

Questions are of value as indicated in the margin

1. Answer **any eight** questions 1×8=8
- i) What is nuclear lamina?
 - ii) What is pericentric inversion?
 - iii) What is transposable element?
 - iv) What is Down's Syndrome?
 - v) What is NPC?
 - vi) What is Allopolyploidy?
 - vii) What is coupling?
 - viii) What is heterosis?
 - ix) What is mass selection?
 - x) What is gynandromorph?
 - xi) How many linkage groups are present in $2n=14$?
 - xii) What is addition law of probability?

Group A(Cytology)

Answer **any two** questions

- 2. How does nucleoside differ from nucleotide? What is Chargoff's rule? Briefly outline the characteristic features of DNA double helix proposed by Watson and Crick. 1+2+5=8
- 3. Name the important enzymes of DNA replication. With suitable experimental evidence establish the semi conservative mode of DNA replication. 2+6=8
- 4. With suitable diagram describe the ultrastructure of chromatin fibre based on nucleosome model. What is chromosome scaffold? 6+2=8

Group B (Genetics)

Answer **any two** questions

- 5. With suitable example compare dominant and recessive epistasis. What is meant by polygenic inheritance? 6+2=8
 - 6. How do tautomeric shift and base analog create mutation? Briefly elucidate the ClB method for detection of sex linked lethal mutation. 5+3=8
 - 7. How is a genetic map prepared by three point test cross? Add notes on interference and coincidence. 5+3=8
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