

B.Sc. (Honours) Examination, 2018

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: 1x8=8
- i) What is chromosome scaffold?
 - ii) What is NOR?
 - iii) What is allopolyploidy?
 - iv) What is oncogene?
 - v) What is Klinefelter syndrome?
 - vi) What is NPC?
 - vii) What are multiple alleles?
 - viii) What is linkage?
 - ix) What is frameshift mutation?
 - x) Define mode
 - xi) What is male sterility?
 - xii) What is criss-cross inheritance?

Group-A (Cytology)

Answer **any two** questions

2. Cite suitable experimental evidences to establish that DNA is the genetic material. 8
3. Which chromosomal mechanism is involved in genetic recombination? Describe the major cytological and molecular events occurring in various stages of Prophase I of meiosis. 1+7=8
4. How does chromosome duplication differ from chromosome inversion? With suitable example elucidate the type of chromosome duplication occurring in biological organisms. How does paracentric inversion differ from pericentric one? 1+5+2=8

Group-B (Genetics)

Answer **any two** questions

5. Explain the codominance with the help of suitable examples. Write down the characteristics features of polygenic inheritance and explains the phenomenon with suitable examples. 3+2+3=8
 6. Differentiate between transition and transversion. Write down the role of chemical mutagens for inducing mutation. 3+5=8
 7. Write down the differences between pure-line selection and mass selection. Describe the sex determination mechanism in drosophila. 4+4=8
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