

2020

BOTANY
[HONOURS]
Paper : VIII

Full Marks : 75

Time : 4 Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***GROUP-A****(Marks : 40)**

1. Answer any **ten** questions: $2 \times 10 = 20$
- What is ribozyme? Mention its importance.
 - What is 'satellite DNA'?
 - What is hybridization?
 - Mention Hardy-Weinberg Law.
 - What is embryo rescue?
 - What is heterosis? Give example.
 - Define transition.
 - What is multiple allele?

- What is backcross, how it differs from Testcross?
 - What is Plasmagenes?
 - What is transposon?
 - Define Epistasis.
 - What is linkage?
 - What is Pleiotropy?
 - Name two non-allelic gene interaction.
2. Answer any **two** questions: $5 \times 2 = 10$
- What is euchromation? Discuss the structure of t-RNA. $1+4$
 - What is 'IS' element? Mention different types of transposon found in bacteria. $1+4$
 - What are the purpose of meristem culture? Mention the procedure. $2+3$
3. Answer any **one** question: $10 \times 1 = 10$
- What is translation? Discuss with figure the different steps of protein synthesis. $2+8$
 - Mention two examples of polyploidy used in crop improvement. Write the principle and method of detection of mutation through 'CLB' method. $2+8$

GROUP-B

(Marks: 35)

4. Answer any **two** questions: $2\frac{1}{2}\times 2=5$
- a) What is cot curve? $2\frac{1}{2}$
 - b) Differentiate between heterochromatin and euchromatin. $2\frac{1}{2}$
 - c) Define 'Artificial seed' and mention its importance? $1+1\frac{1}{2}$
 - d) What is Chargaff's rule? Define anticodon. $1\frac{1}{2}+1$
5. Answer any **two** questions: $5\times 2=10$
- a) What is explant? How will you induce callus from it? $1+4$
 - b) Tabulate the differences between 'A' and 'B' form of DNA. 5
 - c) Briefly mention the protein factors and enzymes involved in DNA replication. 5
6. Answer any **two** questions: $10\times 2=20$
- a) Discuss briefly the properties of Genetic code. What is Wobble hypothesis? $9+1$

- b) Mention the steps of protoplast location and fusion. What is cybrids? What is the screening and separation methods of heterokaryons after fusion of protoplast? $4+1+5$
 - c) What is PCR? How does PCR works? Write some applications of PCR. $1+6+3$
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