



Total No. of Questions – 21

Regd.

Total No. of Printed Pages – 2

No.

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Part – III
BOTANY, Paper-II
(English Version)

Time : 3 Hours]

[Max. Marks : 60

Note : Read the following instructions carefully :

- (i) Answer **all** the questions of Section – A. Answer any **six** questions out of **eight** in Section – B and answer any **two** questions out of **three** in Section – C.
- (ii) In Section – A, questions from Sr. Nos. 1 to 10 are of “Very Short Answer Type”. Each question carries **two** marks. Every answer may be limited to **5** lines. Answer **all** these questions at one place in the same order.
- (iii) In Section – B, questions from Sr. Nos. 11 to 18 are of “Short Answer Type”. Each question carries **four** marks. Every answer may be limited to **20** lines.
- (iv) In Section – C, questions from Sr. Nos. 19 to 21 are of “Long Answer Type”. Each question carries **eight** marks. Every answer may be limited to **60** lines.
- (v) Draw labelled diagrams, wherever necessary for questions in Sections B and C.

SECTION – A

10 × 2 = 20

Note : Answer **all** the questions. Each answer may be limited to **5** lines :

1. How does guttation differ from transpiration ?
2. Where does the photolysis of H_2O occur ? What is its significance ?
3. What is conjugation ? Who discovered it and in which organism ?
4. Who proposed the chromosome theory of inheritance ?
5. Name any three viruses which have RNA as the genetic material.

6. The proportion of nucleotides in a given nucleic acid are : Adenine 18%, Guanine 30%, Cytosine 42% and Uracil 10%. Name the nucleic acid mention the number of strands in it.
7. What is the full form of PCR ? How is it useful in biotechnology ?
8. What is GEAC and what are its objectives ?
9. What are the fermenters ?
10. What is the group of bacteria found in both the rumen of cattle and sludge of sewage treatment ?

SECTION - B

$6 \times 4 = 24$

Note : Answer any **six** questions. Each answer may be limited to **20** lines :

11. What is meant by plasmolysis ? How is it practically useful to us ?
12. Write briefly about enzyme inhibitors.
13. Draw a neat labelled diagram of chloroplast.
14. What are the physiological processes that are regulated by ethylene in plants ?
15. Explain the chemical structure of viruses.
16. Write a brief note on chromosomal mutations and gene mutations.
17. What are the differences between DNA and RNA ?
18. What are some of the biosafety issues concerned with genetically modified crops ?

SECTION - C

$2 \times 8 = 16$

Note : Answer any **two** questions. Each answer may be limited to **60** lines :

19. Explain the reactions of Kreb's cycle.
20. Give a brief account of the tools of recombinant DNA technology.
21. Describe the tissue culture technique and what are the advantages of tissue culture over conventional method of plant breeding in crop improvement programmes ?