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II

Total No. of Questions - 21
Total No. of Printed Pages - 2

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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 knes.
- (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

 $10 \times 2 = 20$

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 H₂O 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.

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- 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?