

**D 90124**

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Name.....

Reg. No.....

**FIFTH SEMESTER B.A./B.Sc. DEGREE EXAMINATION, NOVEMBER 2020**

(CUCBCSS—UG)

**Botany**

**BOT 5B 08—GENERAL AND BIOINFORMATICS, INTRODUCTORY BIOTECHNOLOGY  
AND MOLECULAR BIOLOGY**

Time : Three Hours

Maximum : 80 Marks

**Section A**

*Answer all questions.*

*Each question carries 1 mark.*

1. Name an e-journal.
2. A professional social network site.
3. An example for a nucleotide sequence database.
4. The model plant for genome analysis.
5. Software for molecular visualization of protein.
6. The sugar present in RNA.
7. The initiator codon.
8. The molecular scissors.
9. Hormone promoting callus formation.
10. A bacteriophage based vector.

(10 × 1 = 10 marks)

**Section B**

*Answer at least five questions.*

*Each question carries 4 marks.*

*All questions can be attended.*

*Overall Ceiling 20.*

11. Define cellular totipotency.
12. Distinguish between purines and pyrimidines.
13. Expand DDBJ and list its salient features.
14. What is bio-computing ?

**Turn over**

15. Discuss two methods of managing e-wastes.
16. What is the significance of INFLIBNET ?
17. Define somaclonal variations.
18. Why is Flavr Savr tomato important ?
19. What is electroporation ?
20. Distinguish between transcription and translation.

(5 × 4 = 20 marks)

### Section C

*Answer at least five questions.*

*Each question carries 7 marks.*

*All questions can be attended.*

*Overall Ceiling 35.*

21. Explain biological databases with examples.
22. Give an account on Human Genome Project and its significance.
23. Emphasize the importance of the following enzymes in DNA replication :
  - (a) Primase.
  - (b) DNA Polymerase.
  - (c) Helicase.
  - (d) Topoisomerase.
  - (e) Telomerase.
24. Expand RNA. Distinguish between the structure and functions of tRNA and mRNA.
25. How is *trp* operon regulated in *E. coli* ?
26. What are mutagens ? Give an account on the types of mutagens and their effects.
27. Define micropropagation. What are its advantages and disadvantages ?
28. Write a note on Agrobacterium mediated gene transfer.

(5 × 7 = 35 marks)

### Section D

*Answer any one question.*

*The question carries 15 marks.*

29. Give a detailed description of the structure of DNA with diagrams. How does it differ from RNA ?
30. 'Advances in Information Technology and Social Media are a blessing and a curse'. Discuss the topic. Add a note on cyber-crimes.
31. What are vectors ? List out their salient features. With illustrations, explain the structure of a plasmid vector that you have studied.

(1 × 15 = 15 marks)