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Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, March 2020

First Degree Programme under CBCSS

Botany

Elective course

BO 1661 – BIOTECHNOLOGY AND NANO BIOTECHNOLOGY

(2013 Admission Onwards)

Time : 3 Hours Max. Marks : 80

SECTION – A

Write a short note on the following. **All** questions are compulsory

1. Callus
2. Dikaryon
3. Somatic embryogenesis
4. Cybrids
5. DNA ligases
6. Microinjection
7. ELISA
8. IPR

P.T.O.

9. Dendrimers

10. Single cell proteins

(10 × 1 = 10 Marks)

SECTION – B

Answer any **eight** questions. Each question carries **2** marks

11. Visualisation of nanoscaled biomolecules

12. Microbial culture medium

13. *nif* genes

14. Southern blotting

15. Electroporation

16. Gene library

17. Production of haploids in culture

18. Meristem culture

19. Composition of Potato Dextrose Broth

20. Protoplast fusion

21. Restriction digestion

22. Microbial production of alcohol

(8 × 2 = 16 Marks)

SECTION – C

Answer any **six** of the following. **Each** question carries **4** marks.

23. Explain the isolation of protoplast

24. Structure of Ti plasmid

25. Explain different steps in PCR

26. Concept of edible vaccines

27. Give an account on nanoparticles in biological research.

28. Application of biotechnology in environmental protection.

29. Steps in recombinant DNA technology

30. Agarose gel electrophoresis

31. Ethical problems in biotechnology

(6 × 4 = 24 Marks)

SECTION – D

Answer any **two** of the following. **Each** question carries **15** marks.

32. Write an essay on direct gene transfer methods

33. Describe DNA sequencing by Sanger's method

34. Application of biotechnology in medicine and agriculture

35. Give an account on various microbial culture methods

(2 × 15 = 30 Marks)
