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Reg. No. : .....

Name : .....

Sixth Semester B.Sc. Degree Examination, April 2017
First Degree Programme under CBCSS
BOTANY
(Elective Course)
BO 1661 : Biotechnology and Nano Biotechnology
(2013 Admission Onwards)

Time: 3 Hours Max. Marks: 80

I. Short answer questions (1 mark **each**). **All** questions are **compulsory** :

1) Totipotency.
2) What are cosmids ?
3) What is PCR ?
4) ECORI.
5) Write the expansion of IPR.
6) What are nanoparticles ?
7) GM Foods.
8) Quantum dots.
9) DNA Ligases.
10) Gene library. **(10×1=10 Marks)**

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II. Answer **any eight** of the following questions. **Each** question carries **2** marks :

11) What are Single Cell Proteins ? Give examples.
12) Differentiate between Hybrids and Cybrids.
13) What is the role of EDTA in MS medium ?
14) Write short note on tag polymerase.
15) Define biopharming. What are its applications ?
16) Mention the biosafety and ethical issues related with biotechnology.
17) How virus free plants are produced through plant tissue culture ?

P.T.O.

18) Explain any two methods of explants sterilization followed in tissue culture.

19) Differentiate between differentiation from dedifferentiation.

20) What is an autoclave ? Mention its application.

21) Write short notes on gene therapy.

22) What are HEPA Filters ? Where it is used ? **(8×2=16 Marks)**

III. Answer **any six** of the following :

23) What is somaclonal variation ? Discuss its importance in crop improvement.

24) Describe Agarose Gel electrophoresis.

25) Write notes on somatic embryogenesis and its possible uses.

26) Describe DNA sequencing by Sanger's method.

27) What is RFLP ? Mention its application.

28) Describe the working principle and types of ELISA.

29) Explain a method used to sterilize thermolabile components of tissue culture media.

30) Write a note on the applications of microbes in the production of vinegar and bread.

31) Write notes on physical methods of gene transfer. **(6×4=24 Marks)**

IV. Write essay on **any two** of the following questions :

32) Write an essay on the isolation and culturing of protoplasts. Add a note on its applications.

33) Write an essay on types of cloning vectors.

34) Describe the prospects of nano technology in biological sciences.

35) Elaborate on :

a) Anther culture and its application

b) Southern blotting and its application

c) Composition and use of LB and PDA. **(2×15=30 Marks)**

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