

E 6139



Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, SEPTEMBER 2024

Sixth Semester

Core Course—BIOTECHNOLOGY AND BIOINFORMATICS

(Common for B.Sc. Botany Model I and Model II)

[Prior to 2013 Admissions]

Time : Three Hours

Maximum Weight : 25

Part A (Objective Type)

Answer all questions.

*Weight 1 each for a bunch of **four** questions.*

- I. 1 Which is not step in PCR ?
- (a) Primer production. (b) Denaturing.
(c) Molecular docking. (d) Annealing.
- 2 Which among the following is not a biological database ?
- (a) NCBI. (b) PBD.
(c) OCHEM. (d) SWISS PORT.
- 3 Bt cotton was the transgenic crop developed against :
- (a) Jassids. (b) Beetle.
(c) Dipterans. (d) Bollworm.
- 4 Extra chromosomal DNA in bacterial cell used as vector is :
- (a) F₁ particle. (b) Plasmid.
(c) Mesosome. (d) Ribosome.
- II. Name the following :
- 5 Name a nucleotide sequence database.
- 6 Name the discoverer of Southern blotting.

Turn over





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7 Name the organization which developed Golden Rice.

8 Name a technique used for the production of haploids.

III. Fill in the blanks :

9 Bombardment technique used for gene transfer is known as _____.

10 _____ are antibodies made by identical immune cells.

11 _____ is a molecular visualisation programme.

12 _____ is a collection of microscopic DNA spots attached on a solid surface.

IV. State True or False :

13 Southern blotting is a sequencing technique in Protein Samples.

14 GBIF is a nucleotide data base.

15 Restriction endonuclease is an enzyme used for clearing of DNA molecules.

16 Bt cotton is an insect resistant GM crop.

(4 × 1 = 4)

Part B (Short Answer Questions)

*Answer any **five** of the following.*

Weight 1 each.

17 GM crops are not Environment friendly. Why ?

18 What is meant by Somaclonal variation ?

19 Explain Southern blotting ?

20 Explain the relevance of embryonic cell culture ?

21 Explain HGP.

22 What is Proteomics ?

23 What is PCR ?

24 What is an Autoclave ?

(5 × 1 = 5)





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Part C (Short Essay/Problem Solving Type)

*Answer any **four** of the following.
Weight 2 each.*

- 25 Write a note on molecular docking and computer aided drug designing.
- 26 Explain Sanger's method of DNA sequencing.
- 27 What is a Patent ? What can be patented and what cannot be ?
- 28 Explain Bionanotechnology.
- 29 What are the physical methods of gene transfer ?
- 30 Write a note on invitro secondary metabolite production.

(4 × 2 = 8)

Part D (Essay Type)

*Answer any **two** of the following.
Weight 4 each.*

- 31 Write an essay on the applications of biotechnology.
- 32 Define Micropropagation. Explain the various phases of micropropagation. List the advantages and disadvantages.
- 33 Write an essay on biological databases.

(2 × 4 = 8)

