



SE – 193

VI Semester B.Sc. Examination, September 2020  
(CBCS) (2016-17 and Onwards)  
(F+R)  
**BIOTECHNOLOGY (Paper – VII)**  
**Plant Biotechnology**

Time : 3 Hours

Max. Marks : 70

**Instruction :** Draw neat labelled diagrams wherever necessary.

SECTION – A

- I. Write short notes on the following : (5×2=10)
- 1) Gibberlic acid.
  - 2) Sodium hypochlorite.
  - 3) Log phase.
  - 4) Heterokaryon.
  - 5) Endosperm.

SECTION – B

- II. Answer any four of the following : (4×5=20)
- 6) Brief about any two growth regulators used in plant tissue culture.
  - 7) What is somaclonal variation ? Add a note on its application.
  - 8) Explain micro projectile technique as a method of transformation.
  - 9) Write the structure and functions of Ti-plasmid.
  - 10) Give an account on Trade secret in brief.

SECTION – C

- III. Answer any three of the following : (3×10=30)
- 11) Explain in detail the large scale production of secondary metabolites with suitable examples.
  - 12) Discuss the principle and applications of ovary and ovule culture.
  - 13) Describe the methods involved in protoplast fusion, and add a note on cybridization.

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- 14) List out the applications of plant tissue culture in the field of horticulture.
- 15) Give a brief account on intellectual property rights.

SECTION - D

IV. Answer the following in **one word or a sentence each** :

(10×1=10)

- 16) Expand GAAT.
- 17) Dedifferentiation.
- 18) Gametoclone.
- 19) Variant.
- 20) Expand PEG.
- 21) Vir-gene.
- 22) Who is the father of plant tissue culture ?
- 23) What is direct embryogenesis ?
- 24) What is the ploidy of embryo sac ?
- 25) HEPA.

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(F + R) (CBCS) (2016-2017 & Onwards)  
**BIOTECHNOLOGY – VIII**  
**Industrial Biotechnology**

Time : 3 Hours

Max. Marks : 70

**Instruction :** Draw *neat* labelled diagram wherever *necessary*.

**SECTION – A**

I. Write short notes on the following : (5×2=10)

- 1) Airlift bioreactor.
- 2) Cell disruption.
- 3) Hops.
- 4) Applications of enzymes in the food industry.
- 5) Xanthan gum.

**SECTION – B**

II. Answer **any four** of the following : (4×5=20)

- 6) Write a note in maintenance and preservation of industrially important microorganisms.
- 7) Give an account on solid state fermentation.
- 8) Write a note on fermentation media.
- 9) Discuss various techniques used for solid-liquid separation in DSP.
- 10) Explain briefly industrial beer production.

**SECTION – C**

III. Answer **any three** of the following : (3×10=30)

- 11) Discuss different types of fermenter in detail and add a note on its applications.
- 12) Describe in detail the mechanism involved in the industrial production of penicillin.



- 13) Write the steps involved in the production of amylase enzyme.
- 14) Explain the production of (a) Cheese (b) Butter milk.
- 15) What is plant cell suspension culture ? Explain in detail production of capsaicin.

#### SECTION - D

IV. Answer the following in **one word or a sentence each** : **(10×1=10)**

- 16) What is site-directed mutagenesis ?
- 17) Name any one growth phase observed during fermentation.
- 18) Natural media.
- 19) What is the most common buffering agent used in industrial fermentation ?
- 20) Membrane filters.
- 21) What is beer wort ?
- 22) Give an example of organic acid.
- 23) Expand USP.
- 24) Give an example of biopolymers.
- 25) Name one SCP.