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**GS-362**

VI Semester B.Sc. Examination, May/June 2019

**BIOTECHNOLOGY-VII**

**Plant Biotechnology**

**(CBCS) (2016-17 and Onwards) (2013-14 and Onwards)**

**(Fresh+Repeaters)**

Time : 3 Hours

Max. Marks : 70

**Instructions to Candidates :** Draw neat labelled diagrams wherever necessary.

**SECTION - A**

5x2=10

I. Write short notes on the following :

1. 2, 4 - D
2. CPW
3. Trade Secrets
4. Encapsulation
5. Embryoid

**SECTION - B**

4x5=20

II. Answer **any four** of the following :

6. Write the aseptic techniques used in Plant Tissue Culture.
7. Explain the mechanism and applications of gametoclonal variation.
8. What is ovary culture ? Discuss its protocol.
9. Describe in detail, the procedure of protoplast isolation.
10. Comment on *Copyright* and *Trademark*.

**P.T.O.**

**SECTION - C**

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

**3x10=30**

11. What is tetrad ? Give an account of haploid culture with its applications.
12. What are elicitors ? Explain the industrial applications of secondary metabolites.
13. Define transgenic plants. Discuss Agrobacterium mediated gene transfer.
14. Write a note on 'Somatic hybridization' and its applications in detail.
15. Discuss the role of Tissue Culture in *Agriculture* and *Forestry* with suitable examples.

**SECTION - D**

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

16. Ethylene **10x1=10**
17. Synthetic media
18. T-DNA
19. Expand PGR
20. Hardening
21. Fusogen
22. Triploidy
23. Kanamycin Resistant gene
24. Embryo rescue
25. Heterokaryon

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**GS-363**

VI Semester B.Sc. Examination, May/June - 2019

**BIOTECHNOLOGY**

**Industrial Biotechnology (Paper-VIII)**

**(F+R) (CBCS-2016-17 & Onwards/2013-14 & Onwards)**

Time : 3 Hours

Max. Marks : 70

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

**SECTION - A**

I. Write short notes on the following :

5x2=10

1. Liquid Nitrogen preservation
2. Limitations of submerged fermentation
3. Semi synthetic penicillins
4. Continuous flow reactor
5. Yoghurt

**SECTION - B**

II. Answer any four of the following :

4x5=20

6. Improvement of strains by recombinant DNA technology.
7. Write a note on heat sterilization techniques.
8. Explain single cell Oil.
9. Give an account of synthetic media.
10. Describe enzyme immobilization.

**P.T.O.**

**SECTION - C**

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

**3x10=30**

11. Explain in detail the steps involved in production of Xanthan gum. Add a note on its applications.
12. Give an account of down stream processing with reference to :
  - (a) Solvent recovery
  - (b) Cell disruption
13. Discuss in detail about microbial enzymes and add a note on its applications in leather and detergent industries.
14. Explain the different types of spargers and impellers. Add a note on its advantages.
15. Describe in detail the production of Glutamic acid and Vitamin B<sub>12</sub>.

**SECTION - D**

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

**10x1=10**

16. What is trophophase ?
17. Define strain.
18. Write any two raw materials used in solid state fermentation.
19. What are antifoam agents ?
20. Define crystallisation.
21. What is lagering ?
22. Name the strains involved in Idli fermentation.
23. What is benzyl penicillin ?
24. Expand PHB.
25. What is Molasses ?