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RNLKWC/B.Sc./CBCS/VIS/DSE 3T/22

2022

**Botany**

**[Honours]**

**(B.Sc. Sixth Semester End Examination-2022)**

**PAPER- DSE 3T**

*Full Marks: 40*

*Time: 02 Hrs*

*The figures in the right hand margin indicate marks*

*Candidates are required to give their answers in their own words as far as practicable*

*Illustrate the answers wherever necessary*

1. **Answer any FIVE of the following:** **5x2=10**
- a) What is TOC & BOD?
  - b) What is VAM. States its role in forestry
  - c) Why are the air conditions unfavorable for the microorganisms?
  - d) What is the role of a sparger in a fermenter? What is air lift fermentor
  - e) Define continuous fermentation. Give any one example.
  - f) Name two phytochemicals secreted during nodulation process. What is bio-augmentation?
  - g) What do you mean by lyophilization & ultra filtration.
  - h) Difference between fixed bed & fluidized bed bioreactor.

(2)

2. Answer any FOUR of the following:  $4 \times 5 = 20$

- a) Write short notes on: Hydrolysis of starch. 5
- b) Difference between batch & continuous fermentation.  
What are main components of a typical bioreactor. 3+2
- c) Distinguish between endo & ectomycorrhiza. What is hartig net? 4+1
- d) Discuss nitrogenase complex with suitable diagram 5
- e) Describe the techniques used for in-situ bioremediation with suitable sketches. Name one non-indigenous microbe employed for bioremediation. 4+1
- f) Briefly describe the application of immobilized enzyme glucose isomerase in large scale production. 5

3. Answer any ONE question:  $1 \times 10 = 10$

- a) Briefly describe the fermentation process of citric acid production. Explain briefly mode of action penicillin. 6+4
- b) Write down the role of microbes in sewage & domestic waste water treatment systems. Write in short different suitable condition for fermentation.  $(4+4)+2$