



বিদ্যাসাগর বিশ্ববিদ্যালয়  
**VIDYASAGAR UNIVERSITY**  
**Question Paper**

**B.Sc. Honours Examinations 2022**

(Under CBCS Pattern)

**Semester - VI**

**Subject : BOTANY**

**Paper : DSE-3T**

**Full Marks : 40**

**Time : 2 Hours**

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

*The figures in the margin indicate full marks.*

**Industrial and Environmental Microbiology**

**Group - A**

1. Answer any *four* of the following questions :

5×4=20

- (a) Briefly describe the component of a typical bioreactor.
- (b) Write isolation process of root nodulating bacteria.
- (c) What are the causes of water pollution? Discuss the role of microbes in polluted water treatment system.
- (d) Discuss the large scale applications of immobilized enzymes.
- (e) What do you mean downstream processing? Mention its uses.
- (f) Write the short notes on (a) BOD and (b) COD

**Group - B**

2. Answer any *two* of the following questions : 10×2=20

- (a) Briefly describe solid state fermentation. What do you mean by batch and continuous fermentations? 5+5
- (b) Discuss the process of microbial fermentation for the production of amylase enzyme. Write the name of microorganism involved in the production of alcohol and antibiotic. Write the advantages of fixed bed bioreactor. 4+3+3
- (c) Write in brief the method for screening microorganisms for casein and cellulose hydroly. Discuss the recovery process of citric acid. What do you mean by TDS? 4+4+2
- (d) What is mycorrhizae? Write the role of arbuscular mycorrhizae in agriculture practice? Mention the process for water quality testing. 2+4+4

Or,

**Paper - DSE -3T**

**Bioinformatics**

Full Marks : 40

Time : 2 Hours

**Group - A**

1. Answer any *four* of the following questions : 5×4=20

- (a) Briefly discuss the software for phylogenetic analysis.
- (b) What is BLOSUM matrix in bioinformatics?
- (c) Write the difference between local alignment and global alignment.
- (d) What are the various parameters used in protparam to characterise a protein sequence?
- (e) Explain various tools used for structure visualization.
- (f) Write the full form of DDBJ and EMBL. What is scoring matrix? 2+3

**Group - B**

2. Answer any *two* of the following questions : 10×2=20

- (a) What is meant by secondary database? Briefly describe the major secondary databases. 4+6
  - (b) Briefly discuss the biological database retrieval system.
  - (c) Write about the features of SWISS-PROT database.
  - (d) Describe the word method for alignment of sequences. Mention the factors that affect the choice of template selection during homology modeling. 5+5
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