

Roll No.

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GSQ/M-20

1771

BIOTECHNOLOGY

Paper XIII

Microbial Biotechnology

Time : Three Hours]

[Maximum Marks : 40

Note : Attempt *Five* questions in all, selecting at least *one* questions from each Unit. Q. No. **1** is compulsory.

1. (a) What is importance of enrichment media in isolation of bacteria ? 2
- (b) Give advantages of continuous fermentation over batch fermentation. 2
- (c) Define solid state fermentation and give its significance for fermentation industry. 2
- (d) Name *two* fungi known to be employed as bioinsecticides. 1
- (e) Name *two* organisms used for SCP production for human consumption. 1

Unit I

2. Write short notes on the following :
 - (i) Measurement of dissolved oxygen in a fermenter
 - (ii) Lyophilization
 - (iii) Synchronous Growth. 3,3,2

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1

3. What are the different methods for preservation of industrially important microorganism and which method you think is best for culture collection service and why ?

8

4. Write short notes on any *two* of the following :

- (i) Airlift reactor
- (ii) Bubble column reactor
- (iii) Methods for cells disintegration.

Unit II

5. Describe the microbial fermentation for grape wine production.

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6. Write short notes on the following :

4+4

- (i) Citric acid fermentation
- (ii) Single Cell Proteins

7. Write short notes on any *two* of the following :

4+4

- (i) Polyhydroxyalkanoates
- (ii) Biomining
- (iii) Secondary waste water treatment.