

Roll No.

Exam Code : M-21

Subject Code—52914

B. Sc. EXAMINATION

(Batch 2018) (Main)

(Fifth Semester)

BIOTECHNOLOGY

Paper-II

BIT-501L

Microbial Biotechnology

Time : 3 Hours

Maximum Marks : 80

Note : Attempt *Five* questions in all. Q. No. 1 is compulsory. All questions carry equal marks.

1. Write short notes on the following (any *four*) :

4×4=16

- (i) Microbes as food resource
- (ii) Mutant selection
- (iii) Solid state fermentation

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- (iv) Effect of temperature on fermentation
- (v) Bioleaching.

Unit I

2. (a) What are the various methods used to improve the microbial strains ? 8
- (b) Give a brief account on the different techniques employed for preservation of microbial strains. 8
3. (a) Briefly describe the importance of media in microbial growth with suitable examples. 8
- (b) Write a short note on different methods used for the screening of industrially important microorganisms. 8

Unit II

4. Explain the types of fermentation employed for obtaining important products. 16
5. (a) Draw and describe the basic design of fermenters used in fermentation process. 8

- (b) What are the different factors which affect microorganism growth during fermentation ? 8

Unit III

6. Enlist the different types and importance of industrially important products obtained from microorganisms. 16
7. (a) Write a short note on the techniques used for the product purification. 8
- (b) Describe the scale up of a process in detail. 8

Unit IV

8. Briefly explain the all stages of sewage treatment process. 16
9. (a) What are biofertilizers ? Explain their advantages over chemical fertilizers. 8
- (b) Describe the process of biodegradation of xenobiotic compounds. 8