

2072

B.A./B.Sc. (General) Second Semester
Industrial Microbiology
IMB-201: Fundamentals of Microbiology – II

Time allowed: 3 Hours

Max. Marks: 33

NOTE: Attempt five questions in all, including Question No. I which is compulsory and selecting one question from each Unit.

x-x-x

I. Answer the following:-

- a) Define lyophilization and write its principle
- b) Mention the techniques for determining microbial taxonomy
- c) Define solid state fermentation.
- d) Give example of psychrophiles and acidophiles. (3+2+2+2)

UNIT - I

- II. Compare solid state fermentation and submerged state fermentation. (6)
- III. a) Describe the ultrastructure of Gram positive bacteria.
- b) What are the various techniques for determining microbial taxonomy? (3+3)

UNIT - II

- IV. Classify the micro-organisms on the basis of nutritional requirements and provide examples of each of these categories. (6)
- V. Define Culture medium. Give classification of Culture media on the basis of consistency, composition and application. (6)

UNIT - III

- VI. a) Highlight the significance of preservation of industrial micro-organisms.
- b) Explain the principle and process of Liquid nitrogen storage. (3+3)
- VII. Discuss the methods used for maintenance and preservation of Pure Cultures. (6)

UNIT - IV

- VIII. Explain the process of nitrogen fixation by free living microbes in nature. Give example of nitrogen fixation in symbiotic systems. (6)
- IX. Describe the following pathway:
 - a) Kreb's cycle
 - b) Glycolysis (2x3)

x-x-x