

1129

B.A./B.Sc.(General)-1<sup>st</sup> Semester**Industrial Microbiology**

IMB-101: Fundamentals of Microbiology-I

Time allowed: 3 Hours

Max. Marks: 33½

**NOTE:** Attempt five questions in all, including Question No. 1 which is compulsory and selecting one question from each Unit.

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I. Attempt the following: -

- (a) Define synchronous growth.
- (b) What is Tyndallization?
- (c) What is pure culture of bacteria?
- (d) Define generation time.
- (e) What is refractive index?
- (f) Why moist heating is more efficient than dry heating?

(1½+1½+1½+1½+2)

**UNIT-I**

- II. (a) Describe the notable contributions of any two scientists in the field of microbiology.
- (b) Explain phase contrast microscopy. (3+3)

III. Differentiate between: -

- (a) Bright field and dark field microscopy
- (b) TEM and SEM (3+3)

**UNIT-II**

- IV. Describe the various methods used to measure microbial growth. (6)

V. Write short notes on: -

- (a) Chemostat
- (b) Exponential growth phase
- (c) Resistance of endospores (2+2+2)

**UNIT-III**

- VI. (a) What is pasteurization process? Explain in detail the test of pasteurization (Phosphatase test).
- (b) Methanol is germicidal but is not generally used in sterilization. Why? (3+3)

**P.T.O.**

(2)

VII. Discuss the various chemical methods of sterilization. (6)

UNIT-IV

VIII. Differentiate between: -

- (a) Passive and active transport
- (b) Oxygenic and non-oxygenic reaction centres (3+3)

IX. Write notes on: -

- (a) Electron transport chain
- (b) Calvin cycle (3+3)

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