Exam.Code:0001
Sub. Code: 0084

2031

B.A./B.Sc. (General) First Semester

Industrial Microbiology

IMB-101: Fundamentals of Microbiology-I

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. Write short answers of the following:-

a) Pasteurization

b) Actinomycetes

c) Phopho-Phenol Carboxylase

d) Generation Time

e) Osmosis (5x1)

UNIT – I

II. a) Discuss the major contributions of Louis Pasture in the field of microbiology.

b) What is the principle and applications of Scanning probe? (2x3½)

III. a) Which organisms belong to microbial world? What are their main Characteristics?

b) What are the basic differences in bright field, dark field and phase contrast microcopes? Explain. (2x3½)

UNIT – II

IV. a) Draw the growth curve of a bacteria and explain the various phases of growth.

b) Explain the working of chemostat for monitoring the bacterial growth. (2x3½)

V. a) Under which conditions bacteria forms spores. Explain the mechanism of sporulation.

b) How will you get a culture in synchronous form in a bioreactor? (2x3½)

UNIT – III

VI. a) Give a comparison of sterilization and pasteurization methods.

b) What are antimicrobial agents? How they are helpful in controlling the microbial growth? Explain with suitable examples. (2x3½)

P.T.O.

VII. a) What are the precautions to be followed in a Microbiology Laboratory?

b) How temperature can be helpful for controlling the microbial growth? Discuss with suitable examples. (2x3½)

UNIT – IV

VIII. a) Discuss the methods of gaseous exchange in bacteria.

b) Give a comparison of anoxygenic and oxygenic reaction centres. (2x3½)

IX. a) How photosynthesis take place in Cyanobacteria?

b) Discuss the important biochemical properties of cell membrane responsible for intake of nutrients. (2x3½)