Exam. Code: 0001
Sub. Code: 0084

1127

B.A./B.Sc.(General)-1st Semester

Industrial Microbiology

IMB-101: Fundamentals of Microbiology-I

Time allowed: 3 Hours Max. Marks: 33

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

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I. Attempt the following: -

(a) What is importance of Industrial Microbiology?
(b) Differentiate between TEM & SEM.
(c) Define growth rate and generation time.
(d) What is pasteurization process?
(e) Differentiate between active and passive transport.
(f) Name the test to evaluate effectiveness of an antimicrobial agent. (6×1½)

<u>UNIT – I</u>

II. Give an account of important contributions made by following scientists in the field of microbiology – Louis Pastern, Alexander Flaming, Robert Koch and Edward Jenner. (6)

III. Write a note on fluorescent microscope. How it differs from phase contrast microscope? (6)

<u>UNIT – II</u>

IV. (a) Differentiate between synchronous & diauxic growth.
(b) Explain the growth in a chemostat and how steady state is achieved in continuous culture system. (3+3)

V. Define microbial growth. Discuss various sheet and indirect methods used to measure microbial growth. (6)

<u>UNIT – III</u>

VI. (a) How does high and low temperature help in control of microorganisms?
(b) Write a note on pattern of microbial death. (4+2)

VII. (a) Discuss antimicrobial action of alcohol, aldehydes and halogens.
(b) Explain the methods used to assess the susceptibility of microorganisms to antibiotics. (3+3)

<u>UNIT-IV</u>

VIII. (a) Discuss transport mechanisms in microorganisms that require energy.
(b) Write a note on facilitated diffusion. (3+3)

IX. (a) Write in detail about oxygenic/non-oxygenic reaction centres.
(b) Give an account on significance of photo-respiration process. (3+3)

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