Exam.Code:0006
Sub. Code: 0578

1057

B.A./B.Sc. (General) Sixth Semester
Industrial Microbiology (Elective)
IMB-601: Biostatistics, Tools and Techniques

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 normal distribution

b) Explain logarithmic function

c) Give principle of bright field microscopy

d) What is iso-electrophoresis

e) Define Beer Lambert law

f) Give principle of PCR

g) What is differential centrifugation

h) Explain batch and continuous culture

i) What is fluidized bed fermenter (9x1)

UNIT – I

II. a) What is probability? Explain with example.

b) Differentiate between Binomial and Poisson distribution. (2,4)

III. Discuss in detail mean, mode and median with examples. (6)

UNIT – II

IV. a) Give principle and applications of phase contrast microscopy.

b) How ion exchange chromatography help in separation of proteins from mixture. (3,3)

V. a) Explain with diagram principle of Thin Layer Chromatography.

b) Write short note on immune-electrophoresis. (3,3)

UNIT – III

VI. a) Giving Principle and applications of centrifugation process.

b) Give Principle of Flow cytometry. (3,3)

P.T.O.

VII. a) How image is formed in Transmission electron microscope?

b) What are applications of Membrane filters in microbiology? (4,2)

UNIT – IV

VIII. a) Give differences between Submerged and solid state fermentation.

b) Write short note on factors involved in fermenter design. (3,3)

IX. Write short note on:-

a) Continuous stirred tank fementer

b) Application of computer in fermentation technology (3,3)

x-x-x