Exam.Code:0908
Sub. Code: 6704

1079

B.E. (Biotechnology Engineering)
Fourth Semester
BIO-414: Industrial Biotechnology

Time allowed: 3 Hours

Max. Marks: 50

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

x-x-x

I. Attempt the following:-

a) Which crude media has some content of pentose sugar (1)

b) Write the applications of nucleosides. (1)

c) What are the names of organic nitrogen sources used in media? (2)

d) Write the method of cryopreservation? (2)

e) Write the name of an acid produced by fermentation method and its organism. (1)

f) Write the name of organisms used for production of amylases. (1)

g) Write the products obtained from *actinomycetes.* (2)

UNIT – I

II. a) Discuss in detail the method of random mutagenesis for strain improvement.

b) Describe auxotrophs. How these can be selected? (5,5)

III. a) Describe the vectors used for cloning in *E.coli* and *S. cerevisiae*

b) Discuss the design and components of a fermenter. Draw a diagram (5,5)

IV. a) Describe in detail the various components of an ideal growth medium. Give examples

b) Write the crude medias available. (7,3)

UNIT – II

V. a) Describe in detail the microbial production process of streptomycin.

b) Write applications of lactic acid. (7,3)

VI. a) How many TYPES of amylase activity may be present in a microbial culture. Draw a sketch to show the type of activity.

b) Write the applications of proteases. (5,5)

VII. Describe the various methods of immobilization of enzymes. What are the advantages and disadvantages of immobilization (10)

x-x-x