PC-965/MH

BS/2051

INDUSTRIAL FERMENTATION–SEC-2-BHB-20

Time : Three Hours] [Maximum Marks : 74

Note : Attempt *two* questions each from the Section A and B and the Section C is compulsory.

SECTION–A

I. Discuss the production of itaconic acid and gluconic acid in detail. 11

II. Write notes on the following biofuels :

(a) Biogas.

(b) Butanol. 11

III. What is secondary metabolites? Discuss its significance and products. 11

IV. Define immobilization. Write the various techniques for the immobilization of enzymes. 11

SECTION–B

V. What is the scale process? Write down the different steps of the bioprocess. 11

VI. Discuss the downstream process in detail. 11

VII. Describe the mathematical expression of batch culture operation system in single stage CSTR. 11

VIII. What is Maechilis -Menten kinetics? Derive a linear plot of Maechilis -Menten kinetics. 11

SECTION–C

IX. Explain the following :

(a) Maechilis -Menten kinetics.

(b) Biodiesel.

(c) Microbial polysaccharides.

(d) Anti cancer agents.

(e) Limitation of immobilization enzymes.

(f) Hydrolytic enzymes.

(g) Steroid transformation.

(h) Enzymes in food industry.

(i) Process flow.

(j) Chromatography.

(k) Up stream process.

(l) Enzyme kinetics.

(m) Inhibition kinetics.

(n) Mass transfer coefficient.

(o) Metabolic engineering. (15×2=30)