Ref. No. : Ex/FTBE/PC/B/T/316/2024

B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING THIRD YEAR

FIRST SEMESTER – 2024

Subject : MICROBIAL TECHNOLOGY

Time: 3hr **Full Marks:**

Part I (Total Marks 50)

Instructions : Use Separate Answer scripts for each part

Answer any **five** questions from the following: 5x10=50

1. What do you mean by putrefaction, decay and fermentation? What is the role of microorganism in maintaining nitrogen cycle? 5+5=10

2. What are the advantages of extraction of enzyme from microbial source? Mention some criteria for selection of microorganism for enzyme production. 5+5=10

3. Mention any five differences between solid state fermentation and submerged fermentation. Compare between batch and continuous fermentation. 5+5=10

4. Why microbial cells need disruption? Explain any one method of cell disruption. Explain the basic principle of any one method of enzyme purification based on size and mass. (1+3)+6=10

5. What are the advantages and disadvantages of enzyme immobilization? What are the major phases of mushroom cultivation? What is spawn? 6+3+1=10

6. What are the major steps of starch to glucose conversion? Define dextrose equivalent. Explain the procedure of microbial production of glucose from starch. 3+1+6=10

7. What are the advantages and disadvantages of consumption of algal protein? Explain the spore process for microbial conversion of steroid. 6+4=10

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B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING THIRD YEAR FIRST SEMESTER - 2024

Microbial Technology

Time: 3hours Full Marks: 100

Part II (Marks 50)

Answer Question No 1 and any three questions(Q2-Q5) from the following:

1.Explain the following: 4x5

a) Black strap molasses and high test molasses.

b) recovery of Penicillin from fermented broth.

c) malt adjuncts for beer production

d) melolactic fermentation.

2.Define fermentation with example. Give the flow diagram of production of bioethanol from starchy feed stock.. Define Proof and Proof gallon for ethanol. 3+3+4

3.What is apple cider vinegar? Explain the steps involved in production of vinegar. 2+4+4

4.What is malt? What is wort? Explain mashing for beer fermentation. 5+1+4

5.Write short notes on (any two) from the following: 2x5

a.Lactic acid bacteria.

b.aroma of wine.

c.diffusion assay for fermentation product.

d. functions of hops