

B.FTBE 3 RD YEAR 1 ST SEMESTER EXAMINATION- 2019

MICROBIAL TECHNOLOGY

Time: 3hrs

Full Marks: 100

Use Separate Answer Script for each Part

(50 marks for each part)

PART- I

Answer question 1 and any two from the rest.

1. Explain the following:
 - a) Classification of fermentation processes
 - b) Malt and malt adjunct.
 - c) Quick process of vinegar fermentation
 - d) Compressed and active dry yeast. 4×5

2. a) Define antibiotic. Classify antibiotic according to mechanism of action.
b) How does penicillin act as antibiotic? Explain about use of lactose and CSL for penicillin fermentation. Discuss about isolation of penicillin from fermentation broth. 1.5+4+1.5+4+4

3. a) Differentiate between:
 - i) cider vinegar and wine vinegar
 - ii) spirit vinegar and malt vinegarb) State the important factors of vinegar fermentation. Comment on defects of vinegar.

c) Discuss about utilization of starchy material for ethanol fermentation. 4+3+3+5

[Turn over

4. Write Short Note on(any three) of the following:

3x5

- a)Upstream and downstream processing of a fermentation.
- b) ale beer and lager beer.
- c)Efficiency of ethanol fermentation.
- d)aroma of wine

**B.E. FOOD TECHNOLOGY AND BIO-CHEMICAL ENGINEERING THIRD YEAR
FIRST SEMESTER - 2019**

Subject: MICROBIAL TECHNOLOGY Time: Three Hours Full Marks: 100

Use Separate Answer Scripts for Part I and Part II

Part II (Marks-50)

Group A

Answer any **two** from Group A 10+10=20

1. What do you mean by putrefaction, decay and fermentation? Microorganism have useful place in industrial process-Justify with some examples. 5+5=10

2. What are lactic acid bacteria? Give two examples of it. What is the difference between homo and hetero fermentative lactic acid bacteria? Give one example each of homo and hetero fermentative lactic acid bacteria. Write two industrial application of lactic acid. 1+2+3+2+2=10

3. How microbial cells are disrupted to extract intracellular enzymes? What are the selection criteria to choose any microorganism for enzyme production? 6+4=10

Group B

Answer any **two** from Group B 15+15=30

4. a) Name the enzyme required to convert glucose to fructose. Mention any one bacterial source of that enzyme. How microbial conversion of glucose to fructose occurs? 1+1+5=7

b) What are the advantages and disadvantages of algal protein as human food? 4+4=8

5. What is enzyme immobilization? What are the merits and demerits of enzyme immobilization? What are the methods of enzyme immobilization? 1+(3+3)+8=15

6. a) How spore process is used for microbial transformation of steroids. 8

b) Name two edible variety of mushroom. What is spawn and how it is produced? 2+(1+4)=7