

M. TECH. (F. T. B. E.) 1ST SEMESTER EXAMINATION, 2017

MICROBIAL TECHNOLOGY Time: Three Hours

Full Marks: 100

Use Separate Answer Scripts for Part I and Part II

Part I (Marks-50)

Question No.1 is Compulsory and answer any three questions from rest

1. a) What is the function of capsule on bacterial cell wall?
b) What are the structures present outside the cell wall of a bacterial cell?
c) What is Thallus?
2+2+1=5
2. What are the different types of reproductive spore produced by fungi? What are actinomyces? What are the similarities and dissimilarities of actinomyces with bacteria and mold?
7+2+6=15
3. What are the methods of bacterial growth measurement? How bacteria are identified by 16s rRNA sequencing? How aromatic hydrocarbons are transformed by bacteria/
6+5+4=15
4. With diagram explain the morphological features of fungi. With example explain how microorganism is used in food production.
7+8=15
5. How microbial spoilage occurs to i) Cereal grains ii) Fruits and vegetables iii) Fruit juice iv) Meat and meat products v) Eggs.
5x3=15
6. Write short note on any two:
7.5x2=15
 - a) Microbial production of α - amylase
 - b) Microbial production of pectinases
 - c) Microbial transformation of alkane
 - d) Microorganism as food

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ADVANCED MICROBIAL TECHNOLOGY

Time: 3hrs

Full Marks: 100

Use Separate Answer Script for each Part

(50 marks for each part)

PART- II

Answer question 1 and any two from the rest.

1. Explain the following 4 X 5
 - a) Enzymes involved in exopolysaccharide synthesis
 - b) Inhibition of ethanol fermentation
 - c) Mode of action of antibiotics on growth of organisms
 - d) Utilization of starchy materials for ethanol fermentation

2. a) What is fermentation? What is meant by biological assay of fermentation product 2+ 2.5
 - b) State the characteristics of a test organism 3.5
 - c) Explain diffusion and turbidimetric assay for detection of fermented products. 7

3. a) Comment on primary metabolite and secondary metabolite 4
 - b) What is antibiotic? What is semi synthetic penicillin? Describe different methods of production of semi synthetic penicillin 1.5+ 1.5 +8

4. Write short notes on (any 3) (3 X 5)
 - a) Problems of polysaccharide production
 - b) Dextran
 - c) Commercially important fermentation
 - d) Carbon catabolite repression