

II B.Tech I Semester Supplementary Examinations, November 2006

MICROBIOLOGY

(Bio-Technology)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. Describe the History and Development of virology. [16]
2. Define a "Bacterial species". Explain the difficulties encountered in classification of bacteria. [16]
3. (a) What is unique about the class deutermycetes making it different from other classes of fungi.
(b) Describe the phenomenon of dimorphism as it exists in certain pathogenic fungi. [8+8]
4. How is energy supplied to drive a conc. gradient across the membrane of the cell? [16]
5. Describe the methods of measurement of bacteria that give total counts. [16]
6. Distinguish between positive and negative staining with suitable examples and explain about Hanging drop preparation. [16]
7. What are the factors that influence the sterilization of materials in a microbiology laboratory? [16]
8. (a) What is Pasteurization ?
(b) Describe the methods for Pasteurization of milk.
(c) Name the common microorganisms found in milk products? [4+6+6]

II B.Tech I Semester Supplementary Examinations, November 2006

MICROBIOLOGY

(Bio-Technology)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. Justify the statement. "Microorganisms are more than just agents of disease".
[16]
2. Define a "Bacterial species". Explain the difficulties encountered in classification of bacteria.
[16]
3. Describe the general characteristics of Rickettsia.
[16]
4. (a) Describe the advantages and disadvantages of chemically defined and complex medium.
(b) To produce a high-value protein using recombinant DNA technology which of the medium do you develop
 - i. chemically define media or
 - ii. complex medium why?
[8+8]
5. Write notes on the following
 - (a) Selective medium
 - (b) Chemostat
 - (c) Growth yield
 - (d) Viable count
[4×4]
6. Define water activity. Explain how water activity influences the growth of different microorganisms?
[16]
7. Write short notes on
 - (a) Bacteriostatic and bactericidal agents
 - (b) Surfactants.
[8+8]
8. What are general cleaning and sanitization methods followed in an Industry? [16]

II B.Tech I Semester Supplementary Examinations, November 2006

MICROBIOLOGY

(Bio-Technology)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. Describe the History and Development of virology. [16]
2. Explain the use of different Morphological and cultural characteristics in identification of bacteria. [16]
3. Discuss the economic importance of Fungi. [16]
4. How is energy supplied to drive a conc. gradient across the membrane of the cell? [16]
5. Write notes on the following
 - (a) Complex medium
 - (b) Differential medium
 - (c) Enrichment culturing
 - (d) Flask culture [4×4]
6. Differentiate between an acidic dye and basic dye with suitable examples. Why is a basic dye more effective under alkaline conditions? [16]
7. Distinguish among germicides, antiseptics and antibiotics with suitable examples. [16]
8.
 - (a) What is Pasteurization ?
 - (b) Describe the methods for Pasteurization of milk.
 - (c) Name the common microorganisms found in milk products? [4+6+6]

II B.Tech I Semester Supplementary Examinations, November 2006

MICROBIOLOGY

(Bio-Technology)

Time: 3 hours

Max Marks: 80

**Answer any FIVE Questions
All Questions carry equal marks**

1. Describe the contributions of the following people to the development of microbiology:
 - (a) John Tyndall
 - (b) Von Behring
 - (c) Selman Waksman
 - (d) Alexander Fleming [4×4]
2. Why would you consider ribosomal RNA better molecules for phylogenetic studies than proteins like cytochromes ? [16]
3. Describe the general characters of Protozoa with special reference to pathogenic forms. [16]
4. How is energy supplied to drive a conc. gradient across the membrane of the cell? [16]
5. Describe the methodology for the enrichment of the following bacteria:
 - (a) Thiobacillus thiooxidans
 - (b) Rhizobium
 - (c) Halobacterium
 - (d) Clostridium [4×4]
6. Define water activity. Explain how water activity influences the growth of different microorganisms? [16]
7. Differentiate between the terms Microbiocidal and Microbiostatic agents with suitable examples and their range of antimicrobial action. [16]
8. Explain the methods for evaluation of microbial load in food products? [16]
