

Instructions:

Attempt ALL questions

All questions in carry equal marks.

Question 5 is compulsory

Draw diagrams wherever necessary

Q1. (A) What are the different nutritional categories of bacteria? Make a table showing their carbon, energy and electron source and give examples. (06)

(B) What is the goal of sterilisation? Discuss the principle, mode of action and uses of UV rays in sterilization. (06)

(C) Is Pasteurisation a method of sterilisation or disinfection? Justify your answer. (02)

OR

Q1. (A) Define: 1. Media 2. Nutrients. Give the composition of nutrient agar and the role of each ingredient. (05)

(B) Write a short note on IMViC test (05)

(C) Explain briefly with one example Selective media and Differential media (04)

Q2. (A) Discuss in detail with a diagram bacterial growth curve in a batch culture. List the factors which affect growth of bacteria. (07)

(B) Write a brief note on: 1. Diauxic growth curve 2. Gas Pak method of cultivation of Anaerobes. (07)

OR

Q2. (A) Explain the effect of oxygen, pressure and water on the growth of bacteria & the classification of microorganisms based on it. (08)

(B) Define pure culture. Discuss any four methods of preservation of pure culture. (06)

Q3. (A) Discuss in detail the causative agent, transmission, pathogenesis, symptoms, and treatment of Tuberculosis. (12)

(B) List any two diagnostic tests for AIDS (02)

OR

Q3. (A) Write a note on Source, mode of action, uses and limitations of: (08)

1. Chloramphenicol 2. Tetracycline

(B) Write a short note on: Antibiotic resistance 2. Chemotherapeutic index (06)

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- Q4. (A) Discuss in detail the industrial production of: Penicillin (08)
(B) Define: Batch fermentation 2. Fed batch 3. Brewing 4. Malting (06)

OR

- Q4. (A) What is a Bioreactor? Draw a labeled diagram and explain the functions of the different parts. (08)
(B) Discuss the industrial production of Lysine using microorganisms. Give any two uses of Lysine (06)

Q5. Attempt any SEVEN Questions (14)

1. What is the relationship between time and temperature in sterilisation? What is the time and temperature used in Hot air oven.
2. Define photolithotroph with example.
3. Define liquid media and give its use.
4. What is serial dilution?
5. Define with examples: 1. Obligate Psychrophiles. 2. Halophiles
6. List two important reasons which lead to the stationary phase of growth.
7. Define chemotherapeutic agent. List two important properties of an ideal chemotherapeutic agent
8. Give any two uses of antibiotics other than treatment of diseases.
9. What are the two modes of transmission of Typhoid disease.
10. Name the organism used for steroid transformation. What is the advantage of using microorganisms for this transformation.
11. What are HOPS? Give reasons for using HOPS
12. List any two functions of a Bioreactor.

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