

(3 Hours)

Total Marks: 75

- N.B.:**
1. All questions are compulsory
 2. Draw diagram wherever necessary
 3. Figure to the right indicate full marks

Q.1. Multiple Choice Questions (Answer all the 20 questions)

(20 Marks)

1. Nutrient Broth is a.....
 - a. Solidified media
 - b. Liquid media
 - c. Semisolid media
 - d. Liquid crystalline media
2. In the Electron microscope source of electrons is from
 - a. Tungsten metal
 - b. Mercury
 - c. Combination of Mercury and Tungsten
 - d. Lead and Mercury
3. Direct microscopic count can be done with the aid of
 - a. Mineral oil
 - b. Anaerobic chamber
 - c. Olive oil
 - d. Neubauer chamber
4. Capsulated forms of bacteria are
 - a. Non Virulent
 - b. Virulent
 - c. Useful
 - d. Symbiotic
5. The third phase in the normal bacterial growth cycle is called as
 - a. Lag phase
 - b. Exponential phase
 - c. Stationary phase
 - d. Decline phase
6. One of the following technique is part of the Pure culture techniques used to isolate the pure culture
 - a. Pour plate
 - b. Flow through cell
 - c. Lyophilisation
 - d. Refrigeration

7. Mycobacterial cell wall contains a waxy substance composed of
 - a. Picric acid
 - b. Mycolic acid
 - c. Myristic acid
 - d. Carbonic acid

8. Crystal violet stains the
 - a. Bacterial cytoplasm
 - b. Bacterial cell wall
 - c. Bacterial nucleus
 - d. Bacterial spores

9. Liquid Parenteral preparations can be sterilized through?
 - a. Chemical sterilization
 - b. Membrane filtration
 - c. Desiccation
 - d. Red heat

10. Which of the following method is used for sterilization of Nichrome wire loop?
 - a. Red heat
 - b. Membrane filtration
 - c. Chemical method
 - d. Radiation sterilization

11. Which of the following process does not kill bacterial endospores?
 - a. Hot air sterilization
 - b. Pasteurization
 - c. Autoclave
 - d. Incineration

12. The lowest temperature that kills all microorganisms in a liquid suspension in 10 minutes is known as the
 - a. thermal death time
 - b. thermal death point
 - c. decimal reduction time
 - d. thermal death temperature

13. Any process that destroys the non-spore-forming contaminants on inanimate objects is:
 - a. sterilization
 - b. degermation
 - c. Disinfection
 - d. Antisepsis

14. Fungi
- are photosynthetic
 - are prokaryotic cells
 - have cell walls of peptidoglycan
 - secrete extracellular enzymes
15. The size of viruses is usually measured in
- centimeters
 - micrometers
 - nanometers
 - millimetres
16. Alcohol act as a disinfectant by _____
- Producing toxins
 - Protein denaturation
 - Membrane lysis
 - Coagulation
17. _____ is a test for evaluation of disinfectant
- Antimicrobial assay
 - Test for sterility
 - Phenol coefficient method
 - IMViC
18. _____ is used for turbid products in Test for sterility
- Alternate thioglycollate medium
 - Fluid thioglycollate medium
 - Nutrient agar
 - Nutrient broth
19. Cup plate method depends on the _____ of antibiotics from a cavity through the solidified agar layer in a petri plate.
- Diffusion
 - Dissolution
 - Dispersion
 - Dissociation
20. Microbiological assay of vitamin can be performed by
- Only titrimetric method
 - Only turbidimetric method
 - Both Titrimetric and turbidimetric methods
 - Agar plate method

II) Answer the following (any 2 out of 3) Long questions

20 Marks

1. Explain any one electron microscopy using a neat labelled diagram .Distinguish between gram positive and gram negative bacteria
2. Explain sexual and asexual methods of reproduction of fungi using a neat labelled diagram
3. Enlist Sterilisation methods and explain moist heat sterilisation with respect to various types, mechanism, advantages, disadvantages and applications in pharmaceutical industry

III) Answer the following (any 7 out of 9) Short questions

35 Marks

1. Discuss the principle and procedure of any one differential staining method
 2. Write a note on phenol coefficient method with its merits, demerits and applications
 3. Write a note on viable counting method
 4. Explain alcohol in detail with respect to mechanism of action, antimicrobial properties ,applications and limitations
 5. Write a note on growth curve of bacteria
 6. Discuss in detail lytic cycle of replication in T₄ bacteriophage using a neat labelled diagram.
 7. Write a note on diffusion bioassay
 8. Write a note on tyndallisation
 9. Explain how to identify bacteria on the basis of morphological and cultural characteristics
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