

Time: 3 Hours

Total Marks: 80

- N.B:
1. All questions are compulsory.
  2. Draw neat and label diagram wherever necessary.

**IMCQ**

**20 Marks**

- 1) The cell wall of most of the fungi contains \_\_\_\_\_.
  - a) Hemicellulose
  - b) Chitin
  - c) Peptidoglycan
  - d) Cellulose
- 2) Mycobacterium tuberculosis was discovered by-----
  - a) Robert Koch
  - b) Joseph lister
  - c) Alexander Fleming
  - d) Louis Pasteur
- 3) Size of pore size of membrane which is used for membrane filtration sterility testing?
  - a) 1 micron
  - b) 45 microns
  - c) 4 microns
  - d) 100 microns
- 4) Tyndallization process is an example of \_\_\_\_\_ sterilization
  - a) Dry Heat
  - b) Moist heat
  - c) Radiation
  - d) Cold
- 5) Bacteria are more sensitive to antibiotics at which phase of growth curve?
  - a) Log Phase
  - b) Lag Phase
  - c) Stationary Phase
  - d) Death Phase
- 6) Primary stain used in gram staining is
  - a) Crystal violet
  - b) Carbol Fuschin
  - c) Safranin
  - d) Malachite green

- 7) Absorptive heterotrophic mode of nutrition is present in \_\_\_\_\_
- Pteridophytes
  - Bryophytes
  - Fungi
  - Algae
- 8) \_\_\_\_\_ is commonly known as black bread mould.
- Rhizobium* sp
  - Rhizopus oryzae*
  - Rhizopus nedosus*
  - Rhizopus stolonifer*
- 9) Viruses largely lack metabolic machinery of their own to generate energy or to synthesize
- protein
  - carbohydrate
  - alcohol
  - lipids
- 10) Organisms that are usually used for the determination of phenol coefficient is/are?
- E coli
  - Candida
  - Saccharomyces
  - Staphylococcus aureus
- 11) Phenol coefficient of Lysol is?
- Less than 1
  - More than 1
  - Equal to 1
  - Equal to 0
- 12) Who is father of antiseptic surgery?
- L. Pasteur
  - A.V. Leeuwenhoek
  - Joseph Lister
  - Robert Hooke
- 13) Dettol is chemically \_\_\_\_\_ category disinfectants. \_.
- Phenol
  - acid
  - alkali
  - aldehyde

- 14) The temperature required to kill 90% of the microorganisms in a sample at a specific time is the
- pasteurization
  - thermal death time
  - thermal death point
  - tyndallisation
- 15) Pasteurization is used for \_\_\_\_\_
- powders
  - Glass slides
  - Nichrome wire loop
  - Milk and milk products
- 16) In the Phenol coefficient test volume of medium and reaction mixture (each) is 10 ml, reaction temperature is 20<sup>0</sup>C and the sampling times are 5, 10, 15 min. This Phenol coefficient is
- FDA
  - RW
  - CM
  - AQAC
- 17) DOP test is used for the validation of -----
- HEPA filter
  - membrane filter
  - Autoclave
  - Hot air oven
- 18) ----- Test is used for detection of adequate protection of formulation from Microbial spoilage
- Preservative efficacy test
  - Sterility test
  - Pyrogen test
  - Protection challenge test
- 19) Which of the following contains chlorophyll a, d, phycoerythrin and phycocyanin?
- Chlorophyta
  - Phaeophyta
  - Rhodophyta
  - Bacillariophyta
- 20) In *Amoeba* and *Paramecium*, the cell organelle for osmoregulation is
- nucleus
  - body surface
  - contractile vacuole
  - pseudopodia

II) Answer the following (any 2 out of 3) Long questions **12 Marks**

- 1) Draw well labelled diagram of Bacterial cell and enlist different cell organelles and write in brief about cell wall of Gram-negative bacteria and add note on protoplast and spheroplast
- 2) Define sterilization. Explain Dry heat sterilization with the help of mode of action, Applications in pharmaceutical field, advantages, disadvantages.

III) Answer the following (any 4 out of 5) Short questions **48 Marks**

- 1) a) write a note on lifecycle of malarial parasite  
b) Write in detail about different types of Light Microscopy along with ray diagrams
- 2) a) Explain different methods of reproduction in fungi.  
b) write a note on Simple/ monochrome staining
- 3) a) Define Bioassay. Enlist types of microbiological assay and explain any one in detail.  
b) Enlist and explain in detail different factors affecting microbial spoilage of pharmaceutical products
- 4) a) Which are the types of electron microscope and Explain SEM in detail with the help of diagram.  
b) Define disinfection and enlist major groups of disinfectants and add a note on factors affecting disinfectant activity
- 5) a) Write in detail isolation and cultivation of anaerobic bacteria with neat labelled diagram and enlist methods of preservation of bacteria  
b) Enlist different types of Viruses on the basis of host and write in detail methods for isolation and cultivation of animal viruses