S.Y.B.Pharmacy
Sem – III
24/12/2025

Time: 3 hours **Marks: 75**

Note: Draw diagrams whenever necessary.

I MCQ **20M**

1) Period during which the bacterial cells are dividing rapidly
   a. Lag Phase
   b. Log Phase
   c. Stationary Phase
   d. Death Phase

2) Direct microscopic count can be done with the aid of
   a. Mineral oil
   b. Anaerobic chamber
   c. Olive oil
   d. Neubauer chamber

3) Discoverer Koch made his contribution in the discovery of the disease
   a. Meningitis
   b. Tuberculosis
   c. Diphtheria
   d. Gonorrhea

4) Sterilization is?
   a. Process of growing microbes in laboratory
   b. Process for preparation of antibiotics
   c. Killing or removing of all the microorganisms
   d. Estimation of potency

5) ____ is used to prevent infection by killing or inhibiting pathogen growth on animal tissues
   a. sterilant
   b. disinfectant
   c. adsorbent
   d. antiseptic

6) Assessment of microbial contamination and spoilage can be done by_____
   a. Sterility test
   b. Preservative challenge test
   c. IMViC test
   d. Media sterilization test

7) What is a diploid cell line?
   a. Multilayer culture
   b. Transformed cells
   c. Multiple growth of cells
   d. Sub culturing of primary culture

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8) Who is father of antiseptic surgery?
a. L. Pasteur
b. A.V. Leeuwenhoek
c. Joseph Lister
d. Robert Hooke

9) Viruses require _____ for growth.
a Water
b. Peptone
c. Meat extract
d. living cells

10) Which of the following is a limitation of the autoclave?
a. It takes too long to sterilize
b. It will destroy heat labile materials
c. It lacks the ability to inactivate viruses
d. It cannot be used with glassware

11) Lyophilization means
a. Sterilization
b. Freeze drying
c. Burning of ashes
d. Fumigation

12) What is a cluster of polar flagella called?
a. Peritrichous
b. Monotrichous
c. Amphitrichous
d. Lophotrichous

13) Which of this bacterium is resistant to penicillin as it lacks a cell wall?
a. Spirochetes
b. Cyanobacteria
c. Mycoplasmas
d. Bdellovibrios

14) Cup plate method depends on the _____of antibiotics from a cavity through the solidified agar layer in a petri plate.
a. Diffusion
b. Dissolution
c. Dispersion
d. Dissociation

15) What is Chemotaxis?
a. Swimming towards a bacteria
b. Swimming away of a bacteria
c. In the presence of a chemical compound, swimming towards or away of a bacteria
d. None of these

16) Penicillium is a
a. Algae
b. Fungus
c. Bacteria
d. Yeast

17) Which of the following is a method of assessment of microbial stability
a.Determination of active constituents
b.toxicity testing
c.Sterility testing
d.Test for pyrogen

18) The growth of animal cells in vitro in a suitable culture medium is called_____
a. Gene expression
b. Transgenesis
c. Plant tissue culture
d. Animal cell culture

19) Incubation temperature for bacteria using Fluid thioglycolate medium in sterility testing as per I P is------
a. 35-37^{0}C
b.25-30^{0}C
c.40-45^{0}C
d.15 -22^{0}C

20) In cup plate method the graph plotted which relates zone diameter to ----------
a. logarithm of the concentration of antibiotics
b. Time
c. Density
d. antibacterial capacity

II) Answer the following **(any 2 out of 3)** **20 Marks**

1) Draw a neat labelled diagram of bacterial cell and enlist the cell organelles of the bacteria exterior to the cell wall and explain in detail about Bacterial flagella and hydrodynamics of flagellar movement.

2) Discuss moist heat of sterilization with respect principle, procedure, merits, demerits, the mechanism of action and applications

3) Distinguish between viruses and fungi and write a note on sexual reproduction in fungi

III) Answer the following **(any 7 out of 9)** **35 Marks**

1) Discuss in brief principles of Microbiological assay and add note on diffusion assay used for detection of antibiotics.
2) Discuss in brief lytic cycle of replication in T_4 bacteriophage
3) Discuss in brief methods for assessment of a new antibiotics and testing of antimicrobial activity of a new substance.
4) Discuss in detail sterility test on aqueous injections
5) Enlist different types of light microscopy and explain in detail bright field microscopy in detail along with applications
6) Write a note on acid fast staining along with its applications in Microbiology
7) Write in brief about different types of microbial spoilage and add note on assessment of microbial contamination in pharmaceutical products.
8) Write in detail about types of cell culture media used for animal cell tissue culture and add a note on primary, secondary and continuous cell lines.
9) Write in brief about growth curve of bacteria using a suitable diagram

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