S.Y.B. Pharm
Semester Exam
11/12/24
Sem - III

Time: 3 Hours

Total Marks: 75

N.B. : (1) Draw diagrams wherever necessary

Answer the following

I MCQ **(20)**

1) In prokaryotic cells, ribosomes are
a) 70 S
b) 80 S
c) 60S + 40S
d) 50S + 40S

2) Which part of the compound microscope helps in gathering and focusing light rays on the specimen to be viewed?
a) Eyepiece lens
b) Objective lens
c) Condenser lens
d) Magnifying lens

3) Which scientist discovered the germ theory of disease and a logical series of experiments that can confirm relationships between microbes and diseases?
a) Antony van Leeuwenhoek
b) Louis Pasteur
c) Robert Hooke
d) Robert Koch

4) Resolving power of a microscope is a function of _____
a) Wavelength of light used
b) Numerical aperture of lens system
c) Refractive index
d) Wavelength of light used and numerical aperture of lens system

5) _____ is the quickest way to sterilize solutions without heating.
a) Filtration
b) Chemical method of sterilization
c) Steam Sterilization
d) Chlorine dioxide gas

6) _____ is used for sterilizing inoculating loops.
a) Flaming
b) Incineration
c) Hot air oven
d) Steam

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

8) What is a cell line?
a) Multilayer culture

b) Transformed cells
c) Multiple growth of cells
d)Sub culturing of primary culture

9) The scientist who first described cells was?
a) L. Pasteur
b) A.V. Leeuwenhoek
c) Joseph Lister
d) Robert Hooke

10) Which microorganism(s) among the following perform photosynthesis by utilizing light?
a) Cyanobacteria
b) Protozoa
c) Fungi
d) Viruses

11) 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

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

13) In prokaryotes, the hair-like outgrowths which attach to the surface of other bacterial cells are
(a) Flagella
(b) Pili
(c) Capsule
(d) Plasmids

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

15) 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

16) What is phototaxis
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) the bodily movement of motile organism in response to light

17) Aspergillus niger is a
a) Algae
b) Fungus
c) Bacteria
d) Yeast

18) Which of the following is not a method of assessment of microbial stability
a) Determination of active constituents
b) Physico chemical changes
c)Sterility testing
d)Test for pyrogen

19) 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

20) Incubation temperature for Fungi using Soyabean casein digest medium in sterility testing as per I P is------
a) 35-37^{0}C
b)22-25^{0}C
c)40-45^{0}C
d)15 -22^{0}C

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

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 capsule and slime layer and add a note on functions of capsule and slime layer

2) Discuss in detail different methods of sterilization using high temperature and explain autoclaving with respect to principle, procedure merits demerits the mechanism of action and applications

3) Distinguish between bacteria and fungi and add note on asexual reproduction in fungi

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

1)Discuss in brief principles procedure and methods on well diffusion assay used for detection and standardization of antibiotics.

2) Discuss in brief with labelled diagram and all steps involved in lytic cycle of replication in T_4bacteriophage

3) Define Disinfection and enlist major groups of disinfectants with mode of action and practical applications for Phenol

4)Discuss in detail sterility test on aqueous and oily injections according to IP

5) Enlist different types of light microscopy and explain in detail Phase contrast microscopy along with applications

6) Write a note on acid fast staining staining along with its applications in Microbiology

7) Write in brief about different types spoilage, factors affecting the microbial spoilage of pharmaceutical products

8) Write in detail about types of cell culture media used for animal cell culture and add a note on primary established and transformed cell cultures.

9) Write a note on sterilization by nonionizing radiations and its applications to the pharmaceutical industry.

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