

Enrolment Number

Total No. of printed pages = 03

Monsoon, 2024

B. Pharm 3rd Semester Examination
Pharmaceutical Microbiology – Theory

Course Code: BP303T

Full Marks – 75

Time – 3 hours

The figure in the margin indicates full marks for the questions.

Q. No. 1: Multiple choice questions (MCQ) (Answer all questions):**10 x 1=10**

(i) The time taken at a fixed temperature or the radiation dose required to achieve a 90% reduction in viable cells is called

- a) F-value b) Z-value c) D-value d) T-value

(ii) Which of the following is acellular?

- a) Bacteria b) Fungus c) Virus d) Amoeba

(iii) The Schick test is used to determine susceptibility to

- a) Measles b) Diphtheria c) Polio d) Typhoid

(iv) The first vaccine was discovered by

- a) DeBary b) Paul Ehrlich c) Robert Koch d) Edward Jenner

(v) *Bacillus subtilis* is used as test organism to conduct assay of which antibiotic?

- a) Doxycycline b) Streptomycin c) Penicillin d) Erythromycin

(vi) Which of the following microscope produce 3-Dimensional images?

- a) Darkfield b) Scanning Electron c) Phase contrast d) Fluorescent

(vii) Which of the following would not be found in both prokaryotic and eukaryotic cells?

- a) Cytoplasm b) Mitochondria c) Ribosomes d) DNA

(viii) The best method of sterilizing used beakers is.....

- a) Hot air oven b) UV rays c) Gamma rays d) Moist heat

(ix) Traditionally, negative staining is done using.....dye

- a) Nigrosin b) Crystal violet c) Methylene blue d) ZNCF

(x) Viruses are best grown in.....

- a) Blood agar b) Enriched media c) Liquid media with serum d) Media with living cells

(xi) Select the yeast from the following

- a) Aspergillus b) Saccharomyces c) Streptomyces d) Penicillium
- (xii) Incubation temperature range used for the growth of bacteria in a sterility test as per IP is-
- a) 20-25 °C b) 25-30 °C c) 30-35 °C d) 35-40 °C
- (xiii) Time period between each disinfectant dilution with bacterial suspension and sampling for Kelsey-Sykes test is-
- a) 8 min b) 10 min c) 18 min d) 28 min
- (xiv) Sterility test is necessary for
- a) Ophthalmic preparations b) Parenterals c) Both d) None of these
- (xv) Disinfectant used in aseptic room
- a) Sodium hypochlorite b) Sulphuric acid c) Nitric acid d) None of these
- (xvi) Hydrolysis is categorized under which type of contamination?
- a) Physical b) Chemical c) Biological d) Physiological
- (xvii) Dust particle removed by HEPA filter is
- a) 0.5 µm b) 0.3 µm c) 0.6 µm d) 0.9 µm
- (xviii) ULPA is used to remove particle size
- a) 0.12 µm b) 0.24 µm c) 0.36 µm d) 0.48 µm
- (xix) is responsible for the bitterness of milk product
- a) *Lactobacillus arabinosus* b) *Clostridium thermosaccharolyticum* c) *Pseudomonas* spp. d) *Lactobacillus aureus*
- (xx) Linolenic acid with various oxidative reactions forms acids with the help of and water
- a) Pectinase b) Lipoxygenase c) Both d) None of these

Q. No. 2: Short Answers (Answer any seven)

7 x 5 = 35

- (i) Write the principle and working of Laminar Air Flow hood with a neat diagram.
- (ii) Describe Ame's test in detail.
- (iii) Write in detail about the morphology, classification, and reproduction of viruses.
- (iv) Describe how anaerobes are cultivated. Explain in detail.
- (v) Define black fluids and white fluids. Classify disinfectants as per the chemical groups present and discuss their mode of action.
- (vi) Briefly explain gram staining and acid fast staining.
- (vii) Write in detailed account on discovery of Spontaneous Generation Theory.
- (viii) Describe in brief about turbidimetric/tube assay method for microbial assay.
- (ix) Discuss the contribution of Antony von Leeuwenhoek and Joseph Lister in the field of microbiology.

Q. No. 3: Long Answers (Answer any *two*)

2x10 =20

- (i) Enlist the factors influencing disinfection? How would you evaluate disinfectants for bactericidal action? Write short notes on sterility testing of sterile cotton in the microbiology laboratory. (2+4+4)
- (ii) Define culture media. Describe in detail about the ultra structure and morphological classification of bacteria. (2+8)
- (iii) Write in detailed about the principle, construction, utilization, and working procedure of Transmission Electron Microscope (TEM) and Scanning Electron Microscope (SEM) with schematic diagram. (5+5)