

Question Paper

Exam Date & Time: 22-Nov-2023 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Pharmaceutical Microbiology [PBT-BP303T]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Which type of bacterium is pear shaped ? (1)
- [Pasteurella](#)
[Sulfolobus](#)
[Bacillus anthracis](#)
[Caryophanon](#)
- 2) Which bacteria lack cell wall? (1)
- [Gram negative bacteria](#)
[Actinomycetes](#)
[Mycoplasma](#)
[Archaeobacteria](#)
- 3) The back bone of cell wall in prokaryotes is (1)
- [Lipopolysaccharide](#)
[Murein](#)
[Polypeptide](#)
[Protein](#)
- 4) Palisade arrangement of cells is present in (1)
- [Mycobacterium leprae](#)
[Corynebacterium diphtheriae](#)
[Staphylococcus aureus](#)
[Neisseria gonorrhoeae](#)
- 5) The bacteria which prefer low temperature for cell growth (1)
- [Thermophilic](#)
[Mesophilic](#)
[Psychrophilic](#)
[Thermoturic](#)
- 6) The phase of maximum multiplication with increased population of bacteria with reduced generation time (1)
- [Lag Phase](#)

[Stationary Phase](#)

[Death Phase](#)

[Log Phase](#)

7) Type of microscopy useful for examination of unstained microorganisms suspended in fluids (1)

[Electron microscope](#)

[Dark field microscope](#)

[Fluorescent microscope](#)

[Optical Microscope](#)

8) Identify the colour code for the areas in clean rooms where particle and microbial control is almost impossible (1)

[Green](#)

[Blue](#)

[Black](#)

[Red](#)

9) The test organism used for microbiological assay of vitamin B-12 is (1)

[Lactobacillus leichmanii](#)

[Lactobacillus casei](#)

[Lactobacillus plantarum](#)

[Lactobacillus viridescens](#)

10) HEPA filter is known as (1)

[High Efficiency Particulate Air filter](#)

[High Elution Particulate Air filter](#)

[High Elution Performance Action filter](#)

[High Efficiency Performance Air filter](#)

11) Identify the air sampling method that **doesnot** measure the number of viable and non viable organisms. (1)

[Settle plate method](#)

[Slit air sampler](#)

[Liquid impinge](#)

[Electronic air particle counter](#)

12) Identify the raw material of mineral origin employed for microbial limit test (1)

[Starch](#)

[Gelatin](#)

[Talc](#)

[Acacia](#)

13) LAL test is used to check (1)

[Sterility](#)

[Pyrogens](#)

[Exotoxins](#)

[Cell viability](#)

14) Identify the dermatophytic fungi commonly transferred from industrial plant operators (1)

[Staphylococcus](#)

[Sarcina](#)

[Microsporon](#)

[Proteus](#)

15) Which of the following is best to sterilize heat labile solutions? (1)

[Dry heat](#)

[Autoclave](#)

[Membrane filtration](#)

[Pasteurization](#)

16) If 90% of the population of bacteria that had 10^6 CFU/ml are killed, the remaining CFU/ml is (1)

[10⁷](#)

[9 x 10⁵](#)

[10⁵](#)

[10](#)

17) Which of the following disinfectants acts by disrupting the microbial membranes? (1)

[Cationic detergents](#)

[Halogens](#)

[Heavy metals](#)

[Aldehydes](#)

18) Which of the following compound has historically been compared to assess the effectiveness of chemical disinfectants? (1)

[phenol](#)

[ethyl alcohol](#)

[bleach](#)

[formaldehyde](#)

19) What is the purpose of CO₂ within the cell culture incubator? (1)

[Temperature](#)

[Humidity](#)

[Oxygen](#)

[pH](#)

20) Which of the following is **not** essential equipment for cell culture? (1)

[Cell culture hood](#)

[Centrifuge](#)

[Spectrophotometer](#)

[Incubator](#)

II Long Answers

Answer all the questions.

21) Enlist the methods for cultivating anaerobic bacteria and explain any two methods with neat labelled (10) diagrams.

22) Define saturated steam. With the help of a phase diagram discuss the ways and means of formation (10) and prevention of superheated steam in the industrial autoclaves.

III Short Answers

Answer all the questions.

23) Explain microbiological assay of any vitamin using turbidimetric method (5)

- 24) Describe the cultivation of viruses on chick embryo. (5)
- 25) Describe the two level factorial assay of antibiotic using cup plate method. (5)
- 26) Write a note on the source, mode of action, and applications of Ultra-violet rays. (5)
- 27) Explain the effect of concentration on the course of disinfection. (5)
- 28) Explain the evaluation of liquid disinfectant by serial dilution in fluid media. (5)
- 29) Explain applications of cell culture in Pharmaceutical Technology. (5)

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