

Question Paper

Exam Date & Time: 01-Jan-2024 (02:00 PM - 05:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Pharmaceutical Microbiology [PBT-BP303T - S3]

Marks: 75

Duration: 180 mins.

I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Firmicutes have the characteristic features of (1)
- [Gram-negative bacteria](#)
[Cocci](#)
[Mycoplasma](#)
[Photo-synthetic bacteria](#)
- 2) Which microorganism has palisade arrangement? (1)
- [Bacillus subtilis](#)
[Beggiatoa](#)
[Saprospira](#)
[Corynebacterium diphtheria](#)
- 3) Choose the virus having cuboidal shape (1)
- [measles](#)
[cow pox](#)
[tobacco mosaic virus](#)
[influenza](#)
- 4) Petroff-Hausser chamber is used for determination of (1)
- [Cell mass](#)
[Cell number](#)
[Cell nitrogen](#)
[Cell activity](#)
- 5) Identify the immunological reactions used for classification of microorganisms (1)
- [Conjugation](#)
[Transformation](#)
[Osmosis](#)
[Agglutination](#)
- 6) Oil immersion objective in optical microscope has a numerical aperture of (1)
- [0.8](#)
[0.6](#)

1.2

1.0

7) Teichoic acid is found in (1)

[B. subtilis](#)

[M. tuberculosis](#)

[E. coli](#)

[S. aureus](#)

8) Identify the test organism employed in the microbiological assay of calcium pantothenate (1)

[Lactobacillus leichmanii](#)

[Neurospora crassa](#)

[Lactobacillus arabinosus](#)

[Lactobacillus casei](#)

9) Choose the US federal class room which is close to British standard class 2 room for environmental cleanliness (1)

100

10

10000

1000

10) HEPA filter is known as (1)

[High Efficiency Performance Air filter](#)

[High Elution Particulate Air filter](#)

[High Elution Performance Action filter](#)

[High Efficiency Particulate Air filter](#)

11) Identify the genera of microbes present in the thyroid tablets that caused typhoid (1)

[Pseudomonas](#)

[Staphylococcus](#)

[Salmonella](#)

[Streptococcus](#)

12) Identify the raw material of plant origin that is prone for microbial spoilage (1)

[Gelatin](#)

[Tragacanth](#)

[Nylon](#)

[Cochineal](#)

13) Identify the species employed in British pharmacopoeial pyrogen test (1)

[Albino mice](#)

[Wister rats](#)

[Rabbits](#)

[Guinea pigs](#)

14) Identify the most common contaminating microbe present in eye drops which causes eye infection (1)

[Coliform](#)

[Candida](#)

[Salmonella](#)

[Pseudomonas](#)

- 15) The approximate values of 'n' for common bactericides are given. Identify the disinfectant which is much **less** affected by change in concentration. (1)

[Thymol \(n=4\)](#)

[Phenol \(n=6\)](#)

[Lysol \(n=2.5\)](#)

[Formaldehyde](#)

[\(n=1\)](#)

- 16) Which of the following is most effective and used method of sterilization of glassware? (1)

[Autoclave](#)

[Hot air oven](#)

[Radiation](#)

[Chemical method](#)

- 17) Which of the following class of disinfectants act by combining with the amino group of proteins ? (1)

[8-hydroxy quinoline](#)

[Nitrofurans](#)

[Aldehydes](#)

[Surface active](#)

[agents](#)

- 18) When the pH greater than pKa, the acid will be (1)

[fully dissociated](#)

[half dissociated](#)

[partially dissociated](#)

[None of the above](#)

- 19) Which of the following protein expression systems supports proper protein folding? (1)

[Mammalian cells](#)

[Bacterial cells](#)

[Yeast cells](#)

[None of the above](#)

- 20) Why is CO₂ often used in an incubator to culture mammalian cells? (1)

[to control or prevent viral/bacterial contamination](#)

[to control cell growth](#)

[to control the pH](#)

[to control oxygen consumption](#)

II Long Answers

Answer all the questions.

- 1) Enlist and describe the different methods for enumeration of bacteria by cell activity (10)
- 2) Write a note on the design and operation of a hot air oven. (10)

III Short Answers

Answer all the questions.

- 1) Differentiate the morphological characteristics of fungal organisms belonging to *Penicillium* and *Aspergillus* genera with the help of neat labelled diagrams. (5)
- 2) Explain principle behind the microbiological assay of vitamins. (5)

- 3) Explain the two level factorial assay of antibiotic by cup plate assay. (5)
- 4) Write a note on the source, mode of action, and applications of Ultra-violet rays. (5)
- 5) Describe the procedure to determine the Rideal-Walker coefficient. (5)
- 6) Explain the evaluation of liquid disinfectant by gradient plate method. (5)
- 7) Explain various steps involved in the evaluation of preservatives using preservative efficacy tests. (5)

-----End-----