

Date & Time: 28-Dec-2018 (09:30 AM - 12:30 PM)



## MANIPAL ACADEMY OF HIGHER EDUCATION

BPharm Semester III - End Semester Examination, December 2018  
 Course Code:PBT-BP303T Course Title: Pharmaceutical Microbiology  
 Date:28-12-2018

Pharmaceutical Microbiology [PBT-BP 303T]

Marks: 75

Duration: 180 mins.

### I Multiple Choice Questions (MCQs)

Answer all the questions.

Section Duration: 30 mins

- 1) Bacterial cell wall is made up of
- 1) Chitin      2) Murin      3) Dextran      4) None of the above
- Correct option is: 2** (1)

- 2) Bacterial chromosome is
- |             |             |             |             |
|-------------|-------------|-------------|-------------|
| Single      | Double      | Single      | Double      |
| 1) stranded | 2) stranded | 3) stranded | 4) stranded |
| circular    | circular    | linear      | linear      |
- Correct option is: 2** (1)

- 3) Surface appendages of bacteria meant for cell to cell attachment during conjugation are
- 1) Pili      2) Flagella      3) Spinae      4) Cilia
- Correct option is: 1** (1)

- 4) Decolouriser in acid fast staining is
- |                                   |           |                                   |           |
|-----------------------------------|-----------|-----------------------------------|-----------|
| 5% H <sub>2</sub> SO <sub>4</sub> | 3% HCl in | 3% H <sub>2</sub> SO <sub>4</sub> | 5% HCl in |
| 1) in 95%                         | 2) 95%    | 3) in 95%                         | 4) 95%    |
| Methanol                          | Ethanol   | Ethanol                           | Ethanol   |
- Correct option is: 2** (1)

- 5) Which of the following methods of sterilization is included under dry heat sterilization?
- 1) Gamma      2) U.V.      3) IR      4) X-Rays
- (1)

Radiation

Radiation

Radiation

**Correct option is: 3**

6) Which of the following components of a large sterilizer does not allow the passage of pure steam in the discharge channel?

- 1) Reducing valve      2) Check Valve      3) Bypass      4) Balanced Thermostatic trap      (1)

**Correct option is: 4**

7) Which of the following methods of evaluation of disinfectants does assess the bactericidal activity of disinfectants?

- 1) Serial dilution in fluid media      2) Gradient plate technique      3) Rideal - Walker Coefficient      4) Ditch plate technique      (1)

**Correct option is: 3**

8) Given below are the fungal sexual spores, except

- 1) Sporangiospores      2) Ascospores      3) Basidiospores      4) Oospores      (1)

**Correct option is: 1**

9) In sterility testing, the antimicrobial activity of sulphonamides, is neutralised by adding -----to the culture media

- 1) Penicillinase      2) PABA      3) Acid      4) Alkali      (1)

**Correct option is: 2**

10) A particle, which is associated with one or more culturable microorganisms, is known as

- 1) Non-viable particle      2) Coarse Particle      3) Viable Particle      4) Fine Particle      (1)

**Correct option is: 3**

11) Walls, Floors and Ceiling in the clean rooms should

- 1) have smooth, seamless materials      2) be coated with durable, chemical resistant      3) have HEPA filters to provide filtered air      4) All of the above      (1)

## materials

**Correct option is: 4**

The number of dead skin cells released per day from human body is

- 1)  $2 \times 10^6$     2)  $2 \times 10^7$     3)  $2 \times 10^5$     4)  $2 \times 10^4$

(1)

**Correct option is: 2**

13) The flow rate of filtered air in a Laminar Air Flow Cabinet is

- 1) 0.45 m/s    2) 4.5 m/s    3) 45 m/s    4) 0.045m/s

(1)

**Correct option is: 1**

14) CLSI stands for

- |   |   |   |  |
|---|---|---|--|
| 1) Classic<br>Laboratory<br>Standard<br>Institute | 2) Clinical<br>Limits and<br>Standards<br>Institute | 3) Clinical and<br>Laboratory<br>Standards<br>Institute | 4) Clinical<br>Licencing<br>Standards<br>Institute |
|---|---|---|--|

(1)

**Correct option is: 3**

15) In two level factorial assay of antibiotics, the ratio between two standard dilutions of antibiotics, as per IP, is

- 1) 4:5    2) 3:4    3) 4:3    4) 5:4

(1)

**Correct option is: 1**

16) The overall rate of spoilage and deterioration of a chemical will depend upon

- |                                  |   |  |                           |
|----------------------------------|---|--|---------------------------|
| 1) Its<br>molecular<br>structure | 2) The<br>physicochemical<br>properties of a<br>particular<br>environment | 3) The type<br>and<br>quantity of<br>microbes<br>present | 4) All of<br>the<br>above |
|----------------------------------|---|--|---------------------------|

(1)

**Correct option is: 4**

17) The incubation conditions for evaluation of preservatives are

- |  |  |  |  |
|--|--|--|--|
| 1) Incubation<br>of<br>containers<br>or tubes at<br>20 to 25°C | 2) Incubation<br>of<br>containers<br>or tubes at<br>20 to 25°C | 3) Incubation<br>of<br>containers<br>or tubes at<br>35 to 37°C | 4) Incubation<br>of<br>containers<br>or tubes at<br>20 to 25°C |
|--|--|--|--|

(1)

for fungi  
and  
35-37°C  
for  
bacteria.

for all  
organisms.

for all  
organisms.

for *Candida*  
*albicans* and  
35 to 37°C  
for  
remaining  
organisms.

**Correct option is: 2**

18) ----- is an enzyme used in the tissue disaggregation

- 1) Pepsin      2) Collagenase      3) Hyaluronidase      4) Chitinase

**Correct option is: 2**

(1)

19) In hybridoma technology, ----- is used for fusing mouse myeloma cells with plasma cells.

- 1) PEG      2) PVA      3) PVC      4) Both a and b.

**Correct option is: 4**

(1)

20) ----- is the temperature of liquid phase of nitrogen in a nitrogen refrigerator

- 1) -196°C      2) -156°C      3) -187°C      4) -176°C

**Correct option is: 1**

(1)

## II Long Answers

**Answer all the questions.**

- 1) Enlist and classify the methods of enumeration of bacteria and explain the method of determination of viable count in detail. (10)
- 2) Explain the influence of time of contact, concentration of disinfectant and pH on the course of disinfection process. Add a note on the significance of dilution coefficient, 'n'. (10)

## III Short Answers

**Answer all the questions.**

- 1) With the help of a neat labelled diagram, outline the different phases of a normal bacterial growth curve. (5)
- 2) Outline the principle involved in indole production test and citrate utilisation test. (5)
- 3) What is meant by saturated steam? Explain, why saturated steam is considered as an efficient sterilising agent? (5)
- 4) Explain the effect of concentration of ethylene oxide, temperature of load and the presence of moisture on the sterilisation by ethylene oxide. (5)

Define virus. Enlist the methods of cultivation of viruses and explain any one method. (5)

Briefly outline the procedure and calculation of two level factorial assay. (5)

Write a short note on laboratory requirements for in-vitro cultivation of animal cells. (5)

---End---