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BP 303 T

BINA CHOWDHURY CENTRAL LIBRARY
(GIMT & GIPS)
Para, Halki/wapara,
Farwahall-700017

Roll No. of candidate

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2021

B.Pharm. 3rd Semester (Regular) End-Term Examination

Theory

PHARMACEUTICAL MICROBIOLOGY

(New Regulation w.e.f. 2017-18)

Full Marks – 75

Time – Three hours

The figures in the margin indicate full marks
for the questions.

1. Answer the following: (MCQ) (20 × 1 = 20)
- (i) The optimum temperature of autoclave that is used at 15lbs for 15 min is
- (a) –100°C
 - (b) –121°C
 - (c) 100°C
 - (d) 121°C
- (ii) Full form of HEPA is
- (a) High efficiency pure air
 - (b) Highly eliminated pure air
 - (c) High efficiency particulate air
 - (d) Highly eliminated particulate air
- (iii) Hemolytic and non-hemolytic bacteria can be differentiated by using
- (a) Selective media
 - (b) Differential media
 - (c) Both (a) and (b)
 - (d) None of the above

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- (iv) Ziehl-Neelsen method is used to identify
- (a) Staphylococcus bacteria
 - (b) Neisseria sp.
 - (c) Mycobacterium sp.
 - (d) ungi
- (v) Mycology is the study of
- (a) Virus
 - (b) Algae
 - (c) Fungi
 - (d) Bacteria
- (vi) The virus that can infect bacteria is called as
- (a) Bacteriophage
 - (b) Plaques
 - (c) Virion
 - (d) Vectors
- (vii) Herpes simplex is an example of _____ virus.
- (a) ssDNA
 - (b) dsDNA
 - (c) ssRNA
 - (d) dsRNA
- (viii) IMViC donot include
- (a) Methylene blue test
 - (b) Methylene Red test
 - (c) Voges-Proskauer test
 - (d) Citrate test

- (ix) In sterile production area the particle count of $0.5 \mu\text{m}$ should be _____ particles/ft³.
- (a) Less than 100
 - (b) Less than 1000
 - (c) More than 100 but less than 1000
 - (d) More than 100
- (x) The mode of action of preservative include
- (a) Denaturation of protein and enzymes
 - (b) Interfere with cell permeability
 - (c) Hydrolysis
 - (d) All of these
- (xi) Compound microscope was discovered by
- (a) Louis Pasteur
 - (b) Zacharias Janssen
 - (c) Antony V. Leeuwenhoek
 - (d) Robert Hooke
- (xii) Spherical cells arranged in chain like fashion are called as
- (a) Diplococci
 - (b) Streptococci
 - (c) Staphylococci
 - (d) Bacillus
- (xiii) The bacteria that grows best at temperature below 37°C are known as
- (a) Psychrophiles
 - (b) Mesophiles
 - (c) Thermophiles
 - (d) Lithotrophs

(xiv) Percentage of agar used in the solid media is

- (a) 0.1 – 0.2%
- (b) 1 – 2%
- (c) 5 – 10%
- (d) 100%

(xv) 70S ribosomes are found in

- (a) Prokaryotes
- (b) Eukaryotes
- (c) Human
- (d) Viruses

(xvi) The shortest time needed to kill all organisms in a microbial suspension at a specific temperature and under defined conditions is called as

- (a) D-value
- (b) Z-value
- (c) Thermal death point
- (d) Thermal death time

(xvii) During Preservative efficacy test, the viable count is determined after ____, ____ and ____ day.

- (a) 1, 2, 4
- (b) 5, 10, 15
- (c) 7, 14, 28
- (d) 1, 10, 30

(xviii) Microaerophilic bacteria usually

- (a) Grow at high oxygen tension
- (b) Grow at less oxygen tension
- (c) Grow at anaerobic condition
- (d) None of these

(xix) Growth curve is plotted between

- (a) Size of cell and time
- (b) Log number of bacteria and time
- (c) Log number of bacteria and size of cell
- (d) All of these

(xx) Alcohol used in Gram staining acts as a

- (a) Primary stain
- (b) Secondary stain
- (c) Decolorizing agent
- (d) Mordant

2. Answer any *seven* questions :

(7 × 5 = 35)

- (a) Write a note on bacterial growth curve. (5)
- (b) Draw a labelled diagram of prokaryotic cell. Discuss the morphological classification of bacteria. (2 + 3)
- (c) Write a note on phase contrast microscopy with suitable diagram. (5)
- (d) Discuss the sterility testing of ophthalmic products. (5)
- (e) Write a note on standardization of antibiotics. (5)
- (f) What are the different types of microbial spoilage? Discuss the factors affecting the microbial spoilage of pharmaceutical products. (2.5 + 2.5)
- (g) What are the techniques employed for quantitative measurement of bacterial growth? Discuss briefly. (5)
- (h) Classify viruses. Explain the method of virus cultivation. (5)
- (i) Discuss in details about the sexual and asexual reproduction of fungi. (5)

3. Answer any *two* questions :

(2 × 10 = 20)

- (a) What do you mean by sterilization? Explain different methods of sterilization. How do you evaluate the efficiency of different sterilization methods? Describe. (1 + 9)
- (b) What is the significance of staining a microbiological sample? Write a note on different staining techniques? (2 + 8)
- (c) Define cell culture. Discuss in details about the primary, secondary, established and transformed cell cultures. Highlight the applications of cell cultures in pharmaceutical industry and research. (1 + 6 + 3)
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