

09-01-2019

Total No. of printed pages = 7

**BP 303 T**

Roll No. of candidate

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**2019**

**B.Pharm. 3rd Semester End-Semester Examination  
PHARMACEUTICAL MICROBIOLOGY – THEORY**

**(New Regulation)**

**(w.e.f. 2017-2018)**

Full Marks – 75

Time – Three hours

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

1. Write *all* the questions (Group – I) :

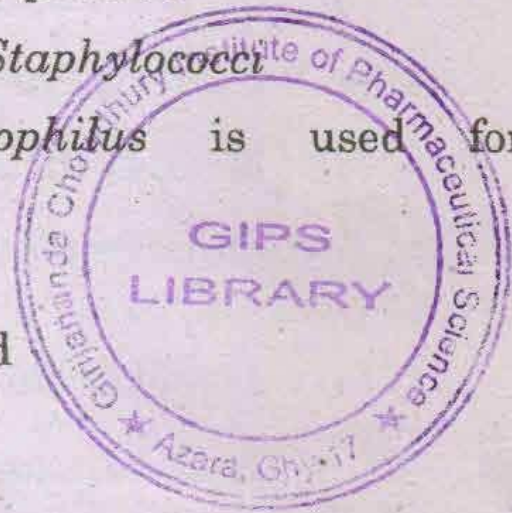
(20 × 1 = 20)

- (i) D value is
- (a) Decrease reduction time to destroy microorganism
  - (b) Decrease in number of microorganism
  - (c) Decrease in viable microorganism
  - (d) Decimal reduction time to destroy microorganism
- (ii) Gas Pack system is used for
- (a) Anaerobi culture
  - (b) Aerobic culture
  - (c) Acid fast culture
  - (d) All of these

[Turn over

- (iii) Minimum Inhibitory concentration (MIC) is used for the evaluation of
- (a) Antibiotics
  - (b) Disinfectant
  - (c) Preservative
  - (d) All of these
- (iv) Cell wall of gram positive microorganism having following percentage of peptidoglycan in their cell wall.
- (a) 50%-90%
  - (b) 30%-40%
  - (c) 20%-40%
  - (d) 5%-10%
- (v) Composition of acid fast stain is
- (a) Safranin and Carbol Fuchsin
  - (b) Zhiel-Neilson Carbol Fuchsin
  - (c) Crystal violet and Carbol Fuchsin
  - (d) Methylene blue.
- (vi) Petri plate for solid culture was designed by
- (a) Robert Konch
  - (b) Robert Hook
  - (c) Robert Petri
  - (d) Luis Paasture
- (vii) Scanning Electron Microscopy (SEM) is used for
- (a) Observe surface topography
  - (b) Inner structure
  - (c) Biological specimen and its part
  - (d) All of these

- (viii) Chocolate agar media specifically used for the culture of
- (a) *Neisseria*
  - (b) *Diphtheria*
  - (c) *Sreptococci*
  - (d) *Staphylococci*
- (ix) *Bacillus stearothermophilus* is used for evaluation of
- (a) Dry heat method
  - (b) Moist heat method
  - (c) Gaseous method
  - (d) All of these
- (x) Phenol coefficient test is used for the evaluation of
- (a) Disinfectant
  - (b) Preservative
  - (c) Antibiotic
  - (d) Vitamin
- (xi) Cold sterilization method is done by
- (a) Ionizing radiation
  - (b) Filtration Sterilization
  - (c) Ethylene oxide sterilization
  - (d) Using  $-20^{\circ}\text{C}$  temperature
- (xii) Conidiospore is formed during
- (a) Asexual reproduction of Bacteria
  - (b) Asexual reproduction of Virus
  - (c) Asexual reproduction of Fungi
  - (d) Asexual reproduction of Rickettia



(xiii) CO<sub>2</sub> incubator is used in

- (a) Cell culture
- (b) Fungal culture
- (c) Bacterial culture
- (d) None of these

(xiv) Test microorganism used for the bioassay of vitamin B<sub>12</sub> is

- (a) *Lactobacillus leichamannii*
- (b) *Lactobacillus casei*
- (c) *Lactobacillus viridescens*
- (d) *Lactobacillus plantarum*

(xv) Positive results in which test determine microbial Spoilage

- (a) Leak test
- (b) LAL test
- (c) Phenol water coefficient test
- (d) RW coefficient test

(xvi) Facultative anaerobic bacteria

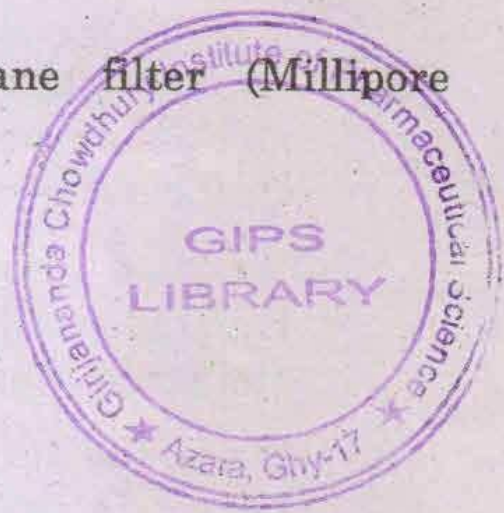
- (a) Do not required oxygen to grow
- (b) Low level of oxygen to grow
- (c) High level of oxygen to grow
- (d) Normal oxygen to grow

(xvii) Cancer Cell line used in viral culture is

- (a) WI-8
- (b) HL-8
- (c) HeLa
- (d) None of these

(xviii) Pore size of membrane filter (Millipore grade, HA) is

- (a)  $0.45 \mu\text{m} \pm 0.02$
- (b)  $0.55 \mu\text{m} \pm 0.02$
- (c)  $0.65 \mu\text{m} \pm 0.02$
- (d)  $0.75 \mu\text{m} \pm 0.02$



(xix) Browne's tube is the

- (a) Chemical indicator of evaluation of sterilization
- (b) Physical indicator of evaluation of sterilization
- (c) Biological indicator of evaluation of sterilization
- (d) None of these

(xx) Growth of *Pseudomonous* was observe in the spoilage of

- (a) Antibiotic
- (b) Vitamin
- (c) Nonsterile pharmaceutical product
- (d) Ophthalmic formulation

2. Answer any seven question (Group – II) : (7 × 5 = 35)

- (a) Classify and describe different types of culture media, give example of each type of with microorganism growth in the media. (5)
- (b) Describe in detail about the procedure for isolation of microorganism from mixed culture. (5)

- (c) Explain the term bacteriostatic, bactericidal and disinfectant with example? Define the RW coefficient test of disinfectant. (3+2=5)
- (d) Write a short note on the growth curve. Differentiate between cell wall of gram positive and gram negative microorganism. (3+2=5)
- (e) Write the name of one pathogenic fungi and virus. Describe a common method of the cultivation of virus. (2+3=5)
- (f) Describe in brief about the layout of an aseptic area in industry. Comment on use of the laminar air flow. (5)
- (g) Describe in brief about microbial spoilage and method for prevention of contaminations. (5)
- (h) Give your comment on the prevention of pharmaceutical product using antimicrobial agent. Write short note on the evaluation techniques of microbial stability of formulations. (2.5+2.5=5)
- (i) Describe the general procedure and application of cell culture in the field of pharmacy. (5)

3. Write any *two* questions (Group III) : (2 × 10 = 20)

- (a) What are the different types of staining techniques? Describe in details of gram staining and acid fast staining methods. Explain in brief about IMViC method. Write in brief about the working principle of Phase contrast, dark-field and electron microscope. (7+3=10)
- (b) Classify different sterilization methods with brief description of its working principle? Write the method of sterility testing as per IP. (6+4=10)

- (c) Write in brief about the principles used of bioassay. Describe a general procedure used for standardization of the bio-assay of antibiotic and vitamin. Explain in brief about physical chemical and biological indicator used for sterilization evaluation. (6 + 4 = 10)
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