

II B. Pharmacy I Semester Regular/Supplementary Examinations, February/March- 2022
PHARMACEUTICAL MICROBIOLOGY

Time: 3 hours

Max. Marks: 75

- Note: 1. Question Paper consists of three parts (**Part-I, Part-II & Part-III**)
 2. Answer ALL (Multiple Choice) Questions from **Part-I**
 3. Answer any **TWO** Questions from **Part-II**
 4. Answer any **SEVEN** Questions from **Part-III**

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**PART - I**

1. i) All of the following are common bacteriological stains, Except: (1M)  
 a) Bismarck brown      b) Methylene blue      c) Eosin      d) Crystal violet
- ii) Which of the given bacteria has flagella and shows positive motility test? (1M)  
 a) Staphylococcus aureus      b) Yersinia pestis  
 c) Klebsiellapneumoniae      d) Proteus vulgaris
- iii) MacConkey's agar consists of ....., which inhibits the growth of gram-positive bacteria. (1M)  
 a) Blood      b) Peptone      c) Bile salts      d) Tryptophan
- iv) Gram positive microorganisms have (1M)  
 a) violet color      b) pink-red color      c) green color      d) black color
- v) Nutrient agar is prepared by addition of (1M)  
 a) 0% agar in nutrient broth      b) 3% agar in nutrient broth  
 c) 5% agar in nutrient broth      d) 10% agar in nutrient broth
- vi) Transcription of bacterial DNA is mediated by (1M)  
 a) DNA polymerase      b) RNA polymerase      c) DNA ligase      d) RNA ligase
- vii) Which of the following is the relationship between optical density and cell mass? (1M)  
 a) exponentially proportional      b) linearly proportional  
 c) inversely proportional      d) not related
- viii) In Laminar air flow \_\_\_\_\_ type of filter is located. (1M)  
 a) membrane filter      b) Seitz Filter      c) HEPA      d) all of the above
- ix) Which of the following method is used for a viable count of a culture? (1M)  
 a) Direct microscopic count      b) Plate-count method  
 c) Membrane-filter count      d) Plate-count method and membrane-filter count
- x) Nichrome loop wire is used in which of the following techniques? (1M)  
 a) Pour-plate      b) Streak-plate      c) Spread-plate      d) Roll-tube technique
- xi) Which device is used to pick a single bacterial cell from a mixed culture? (1M)  
 a) microscope      b) micropipette      c) microprobe      d) micromanipulator
- xii) Cell counting can be carried out by (1M)  
 a) direct microscopic count using petroffhansser counting chamber  
 b) plate counting  
 c) membrane filter count  
 d) all of the above
- xiii) A virus is made up of \_\_\_\_\_. (1M)  
 a) Protein coat and nucleic acid      b) Protein coat and mitochondria  
 c) Nucleic acid and cell membrane      d) Nucleic acid, cell wall and cell membrane

- xiv) Viruses that attack bacteria are called \_\_\_\_\_. (1M)  
a) Virophage    b) Lysophage    c) Bacteriophage    d) None of the above
- xv) Sabouraud media for the growth of fungi is composed of \_\_\_\_\_. (1M)  
a) glucose and ammonia    b) maltose and peptone  
c) sucrose and peptone    d) peptone
- xvi) What are the cell wall structural components of fungi? (1M)  
a) peptidoglycan    b) cellulose  
c) chitin    d) chitin, cellulose, or hemicellulose
- xvii) Which of the following show the maximum resistance to physical and chemical agents? (1M)  
a) Viruses    b) Mold spores    c) Bacterial spores    d) E.coli
- xviii) Which of the following actions are not affected by antimicrobial agents? (1M)  
a) cell wall synthesis    b) nucleic acid synthesis  
c) protein synthesis    d) capsule formation
- xix) Efficiency of HEPA filter is (1M)  
a) 95.52%    b) 98.69%    c) 88.19%    d) 99.97%
- xx) Class 100 stands for (1M)  
a) Clean room is used in semiconductor industry  
b) Clean room is used in microelectronic industry  
c) Clean room is used in sterile manufacturing unit  
d) Clean room is used for hydraulic equipment

### PART -II

2. a) Write a note on nutritional requirements of bacteria. (5M)  
b) Describe about dark field microscopy and electron microscopy. (5M)
3. a) What are disinfectants? Classify them with examples. Discuss the methods used for evaluation of disinfectants. (5M)  
b) Outline the viral replication cycle. (5M)
4. a) What is microbial spoilage? (5M)  
b) What are the Applications of cell cultures in Pharmaceutical Industry? (5M)

### PART -III

- 5 Discuss the scope and significance of pharmaceutical microbiology. (5M)
- 6 Write a note on biochemical tests used for identification of bacteria. (5M)
- 7 Discuss the principle, methodology, merits and demerits of radiation sterilization. (5M)
- 8 Write in brief on sterility testing of sterile powders. (5M)
- 9 Discuss methods used for finding MIC of bactericidal drugs. (5M)
- 10 Explain the microbial assay of vitamin B12. (5M)
- 11 With a neat block diagram explain the design of aseptic area. (5M)
- 12 Outline the general procedure used for animal cell culture. (5M)
- 13 Write in brief on study of microbial stability of pharmaceutical products. (5M)