



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B. PHARM(NEW)/SEM-5/PT-509/2011-12**

**2011**

**PHARMACEUTICAL MICROBIOLOGY**

Time Allotted : 3 Hours

Full Marks : 70

*The figures in the margin indicate full marks.*

*Candidates are required to give their answers in their own words as far as practicable.*

**GROUP - A**

**( Multiple Choice Type Questions )**

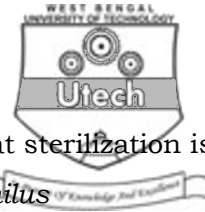
Choose the correct alternatives for any *ten* of the following :

10 × 1 = 10

1. i) Saturated steam at 121°C in an autoclave will exert a pressure of
  - a) 69 kPa
  - b) 103.5 kPa
  - c) 138 kPa
  - d) 207 kPa.
- ii) Saboraund's media is used to selectively isolate
  - a) coliform bacteria
  - b) gram positive bacteria
  - c) yeast
  - d) acid fast organism.
- iii) B-lymphocyte is responsible for
  - a) cell mediated immunity
  - b) humoral immunity
  - c) both (b) & (c)
  - d) none of these.

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[ Turn over



- iv) Biological indicator organism for dry heat sterilization is
- a) *B. atrophaeus*                      b) *B. pumilus*  
c) *B. cereus*                              d) *B. anthracis*.
- v) Thermos table non-aqueous liquids are best sterilized by
- a) Moist heat                              b) Dry heat  
c) Ethylene oxide                      d) Irradiation.
- vi) The causative organism of plague is
- a) *M. leprae*                              b) *Yersinia pestis*  
c) *B. subtilis*                              d) *Shigella dysenteriae*.
- vii) When two or more flagella are present at one pole & a bacterial cell, the arrangement is called
- a) monotrichous                      b) lophotrichous  
c) amphitrichous                      d) peritrichous.
- viii) Protoplast will burst if it is placed in
- a) hypotonic medium                      b) hypertonic medium  
c) isotonic medium                      d) all of these.
- ix) Microbiological assay of amino acid is based on
- a) growth inhibition of bacteria  
b) growth exhibition of bacteria  
c) both (a) and (b)  
d) none of these.
- x) If the magnification of an eyepiece is 10X and the magnification is 45X, then the total magnification of microscope is
- a) 100 X                                      b) 4500 X  
c) 45 X                                         d) 450 X.



- xi) Talc powder is sterilized by
- a) Autoclave                      b) Hot air oven
- c) Radiation                      d) Filtration.
- xii) Streptococci are morphologically arranged in
- a) clusters                      b) chains
- c) colonies                      d) none of these.

**GROUP - B**

**( Short Answer Type Questions )**

Answer any *three* of the following.

3 × 5 = 15

2. Write a short note on interferon.
3. What is the basic principle and methodology followed for RWC test as per Schedule of Drugs and Cosmetic Act ?
4. Discuss the differences between prokaryotic and eukaryotic cells.
5. Define the following terms :
- a) Numerical aperture
- b) Resolving power
- c) Working distance
- d) Magnification
- e) Fluorescence.
6. Write down the principle of the following
- a) Spore staining
- b) Capsular staining.

2 × 2  $\frac{1}{2}$



**GROUP – C**

**( Long Answer Type Questions )**

Answer any *three* of the following.  $3 \times 15 = 45$

7. What do you mean by validation of sterilization process ?  
Write about different indicators used for validation. Write in detail about physical methods of sterilization.  $5 + 5 + 5$
  8. Write notes on *Vibrio cholerae*, *Staphylococcus aureus*, *E.coli* indicating their morphology, characters, pathogenicity, diagnosis, treatment.  $5 + 5 + 5$
  9.
    - a) Define disinfectant and antiseptic.
    - b) What do you mean by 'dynamics of disinfection' ?
    - c) Describe the factors that influence the activity of a disinfectant.  $2 + 5 + 8$
  10.
    - a) Explain the different approaches used in the isolation of actinomycetes.
    - b) Describe the different mechanisms of bacterial resistance to chemotherapeutic agents with examples.
  11.
    - a) Briefly explain the structures and chemistry of cell walls of bacteria under gram staining method.
    - b) Write down the different stages of water analysis by microbiological method.  $2 \times 7 \frac{1}{2}$
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