



Name : .....

Roll No. : .....

Invigilator's Signature : .....

**CS/B. Pharm/SEM-5/PT-509/2009-10**

**2009**

**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 )**

1. Choose the correct alternatives for any *ten* of the following : 10 × 1 = 10
- i) The lymphocyte derived from thymus ( T-lymphocyte ) is responsible for
    - a) cell mediated immunity
    - b) humoral immunity
    - c) acquired immunity
    - d) none of these.
  - ii) M-tuberculosis can be observed under light microscope by
    - a) gram staining
    - b) giemsa staining
    - c) acid-fast staining
    - d) none of these.
  - iii) The bacterial cell wall is basically composed of
    - a) only protein
    - b) peptidoglycan
    - c) only lipid
    - d) glycoprotein.

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- iv) Chick embryo method is suitable technique for
- cultivation of virus
  - cultivation of fungus
  - cultivation of bacteria
  - all of these.
- v) Vitamin assay is based on
- growth inhibition of bacteria
  - growth exhibition of bacteria
  - potency of vitamin
  - none of these.
- vi) The characteristic feature of retroviruses is the presence of
- DNA polymerase
  - RNA polymerase
  - reverse transcriptase
  - restriction endonuclease.
- vii) Prokaryotes have all *except*
- rigid cell wall
  - flagella
  - ribosomes
  - well defined nuclear membrane.
- viii) Viruses differ from bacteria in
- not having a cell wall
  - having only RNA or DNA only
  - having DNA only
  - all of these.
- ix) For thermophilic micro-organisms the minimum growth temperature required is
- |         |          |
|---------|----------|
| a) 20°C | b) 37°C  |
| c) 45°C | d) 65°C. |

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- x) R-W co-efficient test is used to evaluate
- a) antibiotic activity
  - b) sterility of packaging material
  - c) nature of organism in bacterial infection
  - d) bactericidal activity.
- xi) The transfer of cell free naked DNA from one cell to another is known as
- a) conjugation
  - b) transcription
  - c) transduction
  - d) transformation.
- xii) Flash pasteurisation of milk is done at the temperature of
- a) 120° C in 15 minutes
  - b) 75° C in 15-20 minutes
  - c) 50° C in 45 minutes
  - d) 65° C.
- xiii) Treponema pallidum is best identified by
- a) positive staining
  - b) negative staining
  - c) gram staining
  - d) acid fast staining.

**GROUP – B**

**( Short Answer Type Questions )**

Answer any *three* of the following.      3 × 5 = 15

2. Write in brief about the immunofluorescence procedure.
3. Differentiate between primary immunity and secondary immunity.
4. Describe the different procedures of cultivation of viruses.
5. Write a short note on ionising and non-ionising radiation for sterilization process.
6. Give the physical factors affecting the growth of microbes.

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**GROUP – C**

**( Long Answer Type Questions )**

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

7. Describe in detail the major characteristics in taxonomy with respect to classical & molecular characteristics. Describe Whittaker's 5-kingdom classification.
8. a) What do you mean by sterility test ? Write in brief about the techniques in actual practice. 3 + 8 + 4
- b) What are biological indicators ? 3 + 8 + 4
9. a) What do you mean by immunity ? What are the types of immunity known to us ? Write in brief about them.
- b) Write in brief about interferon. ( 2 + 8 ) + 5
10. Write notes on *E.coli*, *salmonella typhi* and *vibrio cholerae* indicating their morphology, cultural characteristics, biochemical characters, pathogenicity, diagnosis and treatment. 5 + 5 + 5
11. Discuss briefly the principle of antibiotic assay microbiologically. What are the different methods of antibiotic assay ? How will you determine the R.W. coefficient of a disinfectant as per schedule 'O' of Drugs and Cosmetic Act ? 4 + 2 + 9
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