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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.

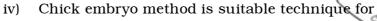
Candidates are required to give their answers in their own words as far as practicable.

GROUP - A (Multiple Choice Type Questions)

- 1. Choose the correct alternatives for any ten of the following: $10 \times 1 = 10$
 - 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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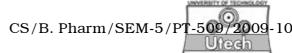
- a) cultivation of virus
- b) cultivation of fungus
- c) cultivation of bacteria
- d) all of these.
- v) Vitamin assay is based on
 - a) growth inhibition of bacteria
 - b) growth exhibition of bacteria
 - c) potency of vitamin
 - d) none of these.
- vi) The characteristic feature of retroviruses is the presence of
 - a) DNA polymerase
 - b) RNA polymerase
 - c) reverse transcriptase
 - d) restriction endonuclease.
- vii) Prokaryotes have all except
 - a) rigid cell wall
 - b) flagella
 - c) ribosomes
 - d) well defined nuclear membrane.
- viii) Viruses differ from bacteria in
 - a) not having a cell wall
 - b) having only RNA or DNA only
 - c) having DNA only
 - d) 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.

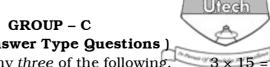
GROUP – B (Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- 2. Write in brief about the immunofluroscence 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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(Long Answer Type Questions) Answer any three of the following.

- 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.
 - What are biological indicators? b)

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 pathogenicity, diagnosis characters, and 5 + 5 + 5treatment.
- 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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