



National Testing Service Pakistan

Plot # 96, Street # 4, H-8/1 Islamabad

MICROBIOLOGY

SAMPLE PAPER

TIME ALLOWED: 2:20 HOURS (Section B and C) 10 Minutes (Section A)

TOTAL MARKS: SECTION A = 10, B AND C = 40

ANSWER ALL QUESTIONS FROM SECTION A

ANSWER ANY THIRTEEN PARTS FROM SECTION B AND TWO QUESTIONS FROM SECTION C

SECTION – A (Marks 10)

Time allowed: 10 Minutes

NOTE: Section–A is compulsory. All parts of this section are to be answered on the question paper itself. It should be completed in the first 10 minutes and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. Do not use lead pencil.

Q. 1 Circle the correct option i.e. A / B / C / D. Each part carries one mark.

- (i) Which of the following bacteria is catalase positive and oxidase negative?
- | | |
|-------------------|------------------|
| A. Staphylococcus | B. Streptococcus |
| C. Neisseria | D. Pseudomonas |
- (ii) The term microbiology, as the study of living organism was used by:
- | | |
|---------------------------|------------------|
| A. Antony van leeuwenhock | B. Robert Koch |
| C. Louis Pasteur | D. Edward Jenner |
- (iii) Incineration is an efficient method for:
- | | |
|---|-----------------------------------|
| A. Destroying contaminated materials | B. Sterilizing points of forceps |
| C. Sterilizing scalpel blades and needles | D. Sterilizing all glass syringes |
- (iv) Phenol is bactericidal at a concentration of:
- | | |
|----------|-----------|
| A. 0.1 % | B. 0.25 % |
| C. 0.5 % | D. 1.0 % |
- (v) The period between inoculation of bacteria in a culture medium and beginning of multiplication is known as:
- | | |
|---------------------|------------------|
| A. Lag phase | B. Log phase |
| C. Stationary phase | D. Decline phase |
- (vi) Peptone water and nutrient broth are:
- | | |
|--------------------|---------------------|
| A. Basal media | B. Enriched media |
| C. Selective media | D. Enrichment media |
- (vii) Crystal violet iodine complex is retained in G positive cells by:
- | | |
|------------------------------|------------------------|
| A. Thick peptidoglycan layer | B. Techoic acid |
| C. Lipid contents | D. Lipopolysaccharides |
- (viii) As a result of post infection which bacteria causes rheumatic fever?
- | | |
|-----------------|------------------------------------|
| A. Pneumococci | B. β haemolytic streptococci |
| C. Meningococci | D. Staphylococci |
- (ix) What is the recommended temperature for sterilization of an object in autoclave?
- | | |
|-------------------------|-------------------------|
| A. 100°C for 30 minutes | B. 110°C for 25 minutes |
| C. 121°C for 20 minutes | D. 131°C for 15 minutes |
- (x) Which of the following organisms can be detected by CAMP test?
- | | |
|-----------------------------|-----------------------------|
| A. S. aureus | B. Streptococcus pneumoniae |
| C. Streptococcus agalactiae | D. Streptococcus pyogenes |

Time allowed: 2:20 Hours

Total Marks Sections B and C: 40

NOTE: Answer any thirteen parts from Section 'B' and any two questions from Section 'C' on the separately provided answer book. Use supplementary answer sheet i.e. Sheet-B if required. Write your answers neatly and legibly.

SECTION – B (Marks 26)

Q. 2 Answer any THIRTEEN parts. The answer to each part should not exceed 2 to 4 lines. (13 x 2 = 26)

- (i) How will you calculate the magnification of compound microscope?
- (ii) What do you mean by sterilization of an object in terms of Microbiology?
- (iii) Which precautions should be taken while using an autoclave?
- (iv) Which factors influence the action of chemical germicides?
- (v) Define enriched media.
- (vi) What are the methods used for the sterilization of culture media?
- (vii) Define antigenic structure of pneumococci.
- (viii) Name the toxins and enzymes produced by *N. gonorrhoeae*.
- (ix) Write down Nagler's Reaction.
- (x) Write down the morphology and staining behaviour of *C. diphtheriae*.
- (xi) Define minimum bactericidal concentration.

- (xii) Define facultative anaerobe.
- (xiii) Define interferon.
- (xiv) Enumerate the routes of transmission of human viruses.
- (xv) Write down the methods of classification of bacteria.
- (xvi) Write down habitat, morphology and staining behaviour of *N. meningitidis*.
- (xvii) Write down Mantoux Reaction.

SECTION – C (Marks 14)

Note: Attempt any TWO questions. All questions carry equal marks.

(2 x 7 = 14)

- Q. 3** Write down in detail the methods for moist heat sterilization.
- Q. 4** Describe antimicrobial resistance.
- Q. 5** Describe the ways of transmission, pathogenicity and laboratory diagnosis of *M. tuberculosis*.