647510 **BSCmiMJ301x-5C** **Seat No :_____**

B.Sc. Semester - 5 (Remedial) (NEP-2020) Examination
March/April-2026
MIC: Clinical Diagnostic Microbiology (Major-11)

Time: 2:00 Hours **Marks:50**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate marks.

Que.1 (1) Explain the process of hematopoiesis and name the primary sites where it occurs during embryonic development and in adults. (05)

(2) Discuss the discovery of the ABO blood group system and explain the genetic basis of ABO blood grouping. (05)

OR

(1) What is the Rh factor? Explain its clinical importance in hemolytic disease of the newborn (HDN). (05)

(2) Describe the process of hemostasis and highlight the role of platelets. (05)

Que.2 (1) Define agglutination test. Briefly describe hemagglutination and passive agglutination. (05)

(2) What is the complement fixation test? State its principle and one clinical application. (05)

OR

(1) Describe the fluorescent antibody technique and its importance in diagnostic microbiology. (05)

(2) Discuss the principle and significance of antistreptolysin test (ASO test) in evaluating virulence. (05)

Que.3 (1) Describe the essential steps in specimen collection and explain why proper handling is crucial for microbial diagnosis. (05)

(2) Explain how microscopy and rapid biochemical methods are employed in the conventional identification of microorganisms. (05)

OR

(1) Write a short note on the principle and application of immunoelectrophoresis. (05)

(2) Compare ELISA and Radioimmunoassay (RIA) in terms of principle and diagnostic applications. (05)

Que.4 (1) Describe the pathogenicity and diagnosis of *Treponema pallidum*. (05)

(2) Discuss the treatment and prevention strategies for *Vibrio cholerae* infections. (05)

OR

(1) Write a short account on *Clostridium* species with reference to their pathogenic mechanisms. (05)

(2) Differentiate between cutaneous mycoses (*Tinea pedis*) and subcutaneous mycoses (*Sporothrix schenckii*) with examples of diagnosis. (05)

Que.5 (1) Outline the methods used for the separation and storage of blood components. (05)

(2) Discuss basics of Intracutaneous diagnostic test. (05)

OR

(1) Explain the role of PCR and Western blot in the detection of pathogens. (05)

(2) Explain the role of opportunistic fungi (*Candida albicans* and *Aspergillus fumigatus*) in immunocompromised patients. (05)

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