



**RAN-2106000102030101**

**S. Y. M.B.B.S. Examination March - 2023**

**Microbiology : Paper - I**

Time: 3 Hours |

**[ Total Marks: 100**

**સૂચના : / Instructions**

- (1) નીચે દર્શાવેલ ❖ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
Fill up strictly the details of ❖ signs on your answer book

Name of the Examination:

**S. Y. M. B. B. S.**

Name of the Subject :

Microbiology : Paper - I

Subject Code No.: 2106000102030101

Seat No.: \_\_\_\_\_

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Student's Signature \_\_\_\_\_

- (2) Draw a label diagram wherever required with blue pen/pencil only.
- (3) Short notes 100-150 words.
- (4) Write heading of each question properly.

## SECTION - 1A

**(General Microbiology and Immunology)**

- Que. 1** Define and differentiate Sterilization from disinfection. Explain the principle, application and control of any one method of sterilization based on heat used in patient care. Explain the concept and use of CSSD in hospitals. **(12 marks)**
- Que. 2** **Write notes. (any four)** **(4 × 7 = 28 marks)**
- Principle, applications and modifications of Polymerase Chain Reaction in patient care.
  - Classification, types and diagnostic modalities of Immunodeficiency diseases.
  - Define vaccine. Describe National Immunization Schedule and the types of vaccines used in it.
  - A girl presented in emergency with sudden onset of itching, redness and erythema following unknown bite. Identify the condition. Explain the immuno-pathogenesis of her condition.
  - Mechanisms of transferable drug resistance in bacteria.

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[ P.T.O. ]

**P1603**

**Que. 3 Multiple Choice Questions.****(10 marks)**

1. *Cryptococcus neoformans* can be best demonstrated by:
  - a. Gram staining
  - b. Negative staining
  - c. Acid-fast staining
  - d. Albert staining
2. The type of microscope best suited for studying microbial motility is:
  - a. Light microscope
  - b. Electron microscope
  - c. Phase contrast microscope
  - d. Atomic force microscope
3. Bacteria are uniformly stained in which of the following phase of growth curve?
  - a. Lag phase
  - b. Log phase
  - c. Stationary phase
  - d. Declining phase
4. All of the following are the basic steps of PCR cycle **EXCEPT**:
  - a. Denaturation
  - b. Amplification
  - c. Extension
  - d. Gel documentation
5. Horizontal transmission of 'R' factor is by:
  - a. Transformation
  - b. Transduction
  - c. Conjugation
  - d. Fusion
6. If the infection occurs at a much higher rate than usual in a particular geographic area, it is known as:
  - a. Epidemic
  - b. Endemic
  - c. Hyper endemic
  - d. Sporadic
7. All are agglutination reactions, **EXCEPT**:
  - a. VDRL test
  - b. Standard agglutination test
  - c. Widal test
  - d. Paul Bunnell test
8. T cell area of lymph node is:
  - a. Cortex
  - b. Para cortical area
  - c. Medulla
  - d. All of the above
9. Cell type which lacks HLA antigen is:
  - a. Monocyte
  - b. Thrombocyte
  - c. Neutrophil
  - d. RBC
10. Application of skin graft for the second time from the same donor will result in:
  - a. First set rejection
  - b. Second set rejection
  - c. Both
  - d. None

**SECTION-IB****(Infection of Blood stream, Cardiovascular system, Gastrointestinal tract, Hepatobiliary system)**

**Que. 1** A young adult female was admitted to the hospital with intense headache, abdominal discomfort for past five days. She had also developed fever which is of remittent type with gradual rise in a step ladder fashion. On examination, she was toxic with temperature of 101°F, tongue was coated and mild splenomegaly was present. **(12 marks)**

- What is the most probable etiological diagnosis? Give justification
- Describe the pathogenesis of this condition.
- Explain the choice of test, sample collection and laboratory diagnosis of the condition.
- Suggest preventive measures for the disease.

**Que. 2** **Write notes. (any four)** **(4 × 7 = 28 marks)**

- Laboratory diagnosis and Post exposure prophylaxis of HIV.
- Describe the pathogenesis and laboratory diagnosis of a female brought to emergency department with sunken eyes. Relatives gave history of sudden onset of watery diarrhea (15-20 times per day) without blood and mucus and abdominal pain.
- Mycotic food poisoning.
- Pyrexia of unknown origin: definition, causes and diagnostic test used
- Importance of effective communication skill in Doctor Patient relationship.

**Que. 3** **Multiple Choice Questions.** **(10 marks)**

- Most common agent causing native valve endocarditis is:
  - S.aureus
  - S.epidermidis
  - Viridans streptococci
  - Enterococci
- Infections causing Megaloblastic anemia include:
  - Babesia microti
  - Diphyllobothrium latum
  - Bartonella bacilliformis
  - Leishmania donovani
- Antibodies against which of the following antigen appear in typhoid carrier?
  - Vi antigen
  - O antigen
  - H antigen
  - Capsular antigen

4. Which of the following is the infective form of the malarial parasite to man:
- a. Merozoite
  - b. Sporozoite
  - c. Trophozoite
  - d. Gametocyte
5. Which of the following is responsible for transmission of HBV infection:
- a. HBsAg
  - b. HBeAg
  - c. HBcAg
  - d. HBV DNA
6. Single most important agent of traveler's diarrhea is:
- a. Enterotoxigenic E. coli
  - b. Enterococcal E. Coli
  - c. Campylobacter jejuni
  - d. Non Typhoidal salmonella
7. Which of the following is **NOT** a commensal in human female genital tract?
- a. Lactobacillus
  - b. Streptococcus agalactiae
  - c. Neisseria
  - d. Trichomonas vaginalis
8. *Leishmania donovani* can be cultivated in:
- a. Blood agar
  - b. NNN medium
  - c. Diamonds medium
  - d. RPMI 1640 medium
9. During the window period of patient with AIDS, best diagnostic test is:
- a. ELISA
  - b. Western Blot
  - c. Rapid test
  - d. RT-PCR
10. Trench fever is caused by:
- a. B.henselae
  - b. B.quintana
  - c. B.bacilliformis
  - d. C.burnetii
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