1. a. Enumerate the causative agents of non-gonococcal urethritis.
   b. What clinical specimens are collected?
   c. Discuss the laboratory diagnosis of non-gonococcal urethritis.

2. a. Write briefly about the infections caused by Legionella pneumophila.
   b. Enumerate the determinants of its pathogenicity.
   c. Describe about its laboratory diagnosis in brief.

3. a. Compare the new methods of detecting mycobacterial species in clinical specimens.
   b. Describe the clinical significance of non-tuberculous mycobacteria.

4. a. Describe the pathogenesis of diarrhoeogenic Escherichia coli strains.
   b. Describe laboratory diagnosis of these Escherichia coli strains.

5. Write about the pathogenesis and laboratory diagnosis of Clostridium difficile infection.

6. a. Write differences between Actinomycetoma and Eumycetoma.
   b. Enumerate the causative agents of Eumycetoma.
   c. Write briefly about the laboratory diagnosis of Eumycetoma.

7. a. Briefly discuss Phaeohyphomycosis.
   b. Discuss its clinical manifestations.
   c. Discuss its laboratory diagnosis.

8. Write briefly on Aspergillosis under following headings:
   a. Its causative agents
   b. Its clinical forms
   c. Laboratory diagnosis

9. Discuss briefly Pneumocystis under following headings:
   a. Its clinical manifestations
   b. Life cycle of P. jirovecii
   c. Laboratory diagnosis of Pneumocystis

10. Enumerate the agents and vectors of Rickettsial diseases. Briefly describe their epidemiology and laboratory diagnosis.
Classify trematodes on the basis of their habitat.

Give general features of blood flukes.

Enumerate intestinal acid fast protozoa.

Give laboratory diagnosis of Cryptosporidiosis.

List the sporozoa that cause human infection.

Write about host immunity and prophylaxis of malaria.

List the laboratory tests used for diagnosis of cerebral malaria.

List the agents causing primary amoebic meningoencephalitis.

Write about its transmission and pathogenicity.

Discuss its laboratory diagnosis.

Classify nematodes on the basis of habitat.

Discuss life cycle, pathogenicity and laboratory diagnosis of Strongyloides stercoralis.

Define prions.

Enumerate diseases produced by prions.

Give characteristics of prion diseases.

Enumerate the various immunological abnormalities seen in HIV infections.

Briefly discuss properties and pathogenesis of Delta agents.

Outline its laboratory diagnosis in brief.

Define arboviruses.

Enumerate arboviruses prevalent in India.

Briefly write on arboviruses transmitted by Culex mosquitoes in India.

Outline the pathogenesis of Polio viruses.

Differentiate vaccine strain from wild strain.

Briefly write on C and D antigens.

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1. a. Enumerate the causes of chronic meningitis in India. 
   b. Write about its laboratory diagnosis, including the recent advances. 

2. a. Enumerate the common causes of bacterial food poisoning. 
   b. Write about pathogenesis and laboratory diagnosis of food poisoning. 

3. a. What is "atypical" pneumonia? 
   b. List its common causes. 
   c. Describe the approach to its laboratory diagnosis. 

4. a. List water borne pathogens. 
   b. Write about various methods for bacteriological examination of water. 

5. Describe the prevention and control of influenza virus in humans. 

6. a. What is pulse polio immunization? 
   b. Comment on reasons of non-eradication of poliomyelitis. 
   c. Discuss strategies to overcome it. 

7. a. Write about importance of hand washing in hospital practice. 
   b. When should a health care worker decontaminate hands? 
   c. Describe the steps of hand hygiene. 

8. a. List various immuno-enzymatic reactions. 
   b. Describe them with suitable examples of applications. 

9. a. List the hospital strains of staphylococcus. 
   b. Describe their role in hospital infection. 

10. a. Define MIC. 
    b. What are MIC 50 and MIC 90? 
    c. Describe different methods of MIC determination along with their advantages and disadvantages.
1. a. What is flexible genetic pool in microbes? 
   b. Describe their significance and applications.

2. a. Define immunological tolerance and autoimmunity.
   b. Discuss establishment and maintenance of tolerance.
   c. Enumerate proposed mechanisms for induction of autoimmunity.

3. a. What are hypersensitivity reactions? Classify them.
   b. Tabulate the cells involved, mechanism of hypersensitivity and give examples of each type.

4. a. Enumerate the different types of microscopes used in Microbiology.
   b. Write their principles.
   c. Discuss electron microscope in detail.

5. Discuss Quality Assurance in Microbiology laboratory.

6. a. Enumerate the different laboratory acquired infections in Microbiology.
   b. Discuss routes of infection.
   c. Discuss organization of Biosafety levels.

   b. Enumerate various types of immuno-diffusion; give the principle of each with one example of its application.

8. a. Discuss briefly bacterial metabolism.
   b. Briefly write on :-
      (i) Oxidation
      (ii) Fermentation
      (iii) Redox potential

   b. Discuss briefly different types of mutation.
   c. How would you demonstrate mutations?

10. Discuss the role of normal microbial flora in health and disease.

POSSESSION/USE OF CELL PHONES OR ANY SUCH ELECTRONIC GADGETS IS NOT PERMITTED INSIDE THE EXAMINATION HALL