**MICROBIOLOGY**

**PAPER - IV**

**Important instructions:**
- Attempt all questions in order.
- Each question carries 10 marks.
- Read the question carefully and answer to the point neatly and legibly.
- Do not leave any blank pages between two answers.
- Indicate the question number correctly for the answer in the margin space.
- Answer all the parts of a single question together.
- Start the answer to a question on a fresh page or leave adequate space between two answers.
- Draw table/diagrams/flowcharts wherever appropriate.

1. Enumerate the different types of microscopes used in Microbiology. Briefly discuss their principle and use in Microbiology.  
   2+(6+2)

2. Define and classify immunity. Briefly write on various mechanisms of innate immunity.  
   (1+2)+7

3. What do you understand by receptors of the immune system? What is their function? Write briefly on preformed receptors.  
   2+2+6

4. What is Antibody Dependent Cell Mediated Cytotoxicity (ADCC)? Describe the clinical conditions in which ADCC may be involved.  
   4+6

5. Define autoimmunity. Briefly write on various mechanisms of autoimmunity.  
   2+8

6. Define and classify hypersensitivity. How would you assess different types of hypersensitivities?  
   3+7

7. Define mutation. What are different types of mutations? How would you demonstrate mutations?  
   1+3+6

8. Enumerate the various methods used in characterizing strains involved in an outbreak. Write in brief the principle of each with one example of bacteria for which it can be used.  
   3+7

9. Enumerate various types of vaccines. Write briefly on advances in vaccine delivery systems, vaccines for adults and modern trends in vaccine development.  
   2+(3+3+2)

10. Define sterilization and disinfection. What are the different sterilization methods commonly used in various areas of the hospital? How will you monitor the process of autoclaving?  
    3+5+2

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