

Subject Title: Microbiology & Immunology

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Unit - I: Fundamentals of Microbiology

Essay Answer Type

1. Describe briefly about structure and general characters of bacteria.
2. Write about scanning and transmission electron microscope and its applications.
3. Describe briefly about structure and general characters of viruses.
4. Discuss in detail about the outline classification of microorganisms.
5. Explain construction of bright field microscope, its parts and applications.
6. Describe the structure and general characters of micro-algae.
7. Explain about disease causing pathogens.

Short Answer Type

1. Robert Koch
2. General characters of fungi
3. Antonie van Leeuwenhoek
4. Phase contrast microscope
5. Mycobacterium
6. Louis Pasteur
7. Dark field microscope
8. Alexander Fleming
9. Fluorescent microscope
10. Winogradsky
11. Edward Jenner

Unit - II: Culture and Identification Microorganism

Essay Answer Type

1. Define sterilization and explain about different sterilization methods.
2. Explain about bacterial growth curve and factors affecting bacterial growth.

3. Write about plaque assay method for identification of viruses.
4. Discuss briefly about bacterial staining methods.
5. Describe in detail about algal media.
6. Write about different types of bacteriological media.
7. Explain the staining method of fungi identification.

Short Answer Type

1. Autoclave
2. PDA
3. Laminar air flow
4. Czapek dox agar
5. Hot air oven
6. Filter sterilization
7. Stationary phase
8. Sabouraud dextrose agar
9. Bacterial growth curve

Unit - III: Basics of Immunology

Essay Answer Type

1. What is innate immunity? Explain various barriers of innate immunity.
2. Explain briefly about adaptive immunity.
3. Write about primary lymphoid organs.
4. Discuss various cells of immune system.
5. Explain briefly about secondary lymphoid organs.
6. What is antigenicity and explain factors affecting antigenicity

Short Answer Type

1. Natural killer cells
2. Phagocytosis
3. Epitopes
4. Types of adjuvants
5. Haptens

6. Bone marrow
7. Macrophages
8. Passive immunity
9. Interferons
10. Biochemical barriers
11. Lymph node

Unit - IV: Humoral and Cell Mediated Immunity

Essay Answer Type

1. Discuss in detail about structure of immunoglobulins, types and its functions.
2. How monoclonal antibodies are produced? Mention applications of monoclonal antibodies.
3. What is major histocompatibility complex? Explain its role in organ transplantation.
4. Write short notes on
 - i) T-cell receptors
 - ii) Antigen presenting cells
 - iii) Cytokines
5. What is hypersensitivity? Discuss about types of hypersensitivity reactions.
6. What is autoimmunity? Describe the mechanism of autoimmunity and autoimmune diseases.

Short Answer Type

1. IgM immunoglobulin
2. Applications of monoclonal antibodies
3. Cell mediated immunity
4. Human Leucocyte Antigen (HLA)
5. Systemic Lupus Erythematosus
6. Rheumatoid arthritis
7. Hypersensitivity IV
8. Ternary complex