

MICROBIOLOGY (MEDICINE)
(POST GRADUATE DEGREE STANDARD)

SUBJECT CODE: 351

UNIT – I: GENERAL MICROBIOLOGY

1. History & Milestone in Microbiology
2. Microscopy
3. Sterilization and disinfection
4. Bio Safety in Microbiology Laboratory
5. Bacterial morphology
6. Staining of Bacteria
7. Nutrition and growth of Bacteria
8. Culture Media & Cultivation of Bacteria
9. Identification of Bacteria & Bacterial Classification
10. Normal Microbial flora
11. Bacterial Genetics

UNIT – II: IMMUNOLOGY

1. Immunity
2. Structures and functions of Immune system
3. Cells of Immune System
4. Immune Response/Immunity
5. Antigen
6. Antibody
7. The complement System
8. Antigen - Antibody reactions
9. Hypersensitivity
10. Auto Immunity
11. Histo-Compatibility complex
12. Transplantation Immunity
13. Tumour Immunity
14. Immuno Deficiency diseases
15. Immuno Hematology
16. Immuno Prophylaxis against infectious Diseases

UNIT – III: SYSTEMATIC BACTERIOLOGY

1. Staphylococcus
2. Streptococcus
3. Neisseria
4. Coryne bacteria

5. Bacillus
6. Mycobacteria
7. Actinomyces & Nocardia
8. Coliform bacteria-Escherichia coli & Klebsiella 9 Proteus
9. Salmonella
10. Shigella
11. Yersinia
12. Pasteurella & Francisella
13. Haemophilus
14. Bordetella
15. Brucella
16. V. Cholerae
17. Pseudomonas
18. Spirochetes
19. Rickettsiae
20. Chlamydia
21. Mycoplasma
22. Miscellaneous Bacteria

UNIT – IV: PARASITOLOGY

1. Classification
2. General principles of Diagnosing parasites & treatment of parasitic infection
3. Protozoology
Pathogenic and Non-pathogenic amoebae and free living amoebae
Intestinal, Blood & Tissue flagellates Plasmodium, Toxoplasma, Isospora
4. Balantidium coli
5. Helminthology
Cestodes, Trematodes, Nematodes

UNIT – V: GENERAL VIROLOGY

1. Classification of viruses
2. Replication of Viruses
3. Cultivation of Viruses
4. Identification of Viruses & Lab diagnosis
5. Pathogenesis & Host response to Viral infection
6. Bacteriophage
7. Antiviral Agents
8. Viral Vaccines

UNIT – VI: VIRUSES

1. Pox
2. Adeno

3. Herpes
4. Papova
5. Parvo
6. Picorna
7. Orthomyxo
8. Paramyxo
9. Rota virus
10. Rhabdo virus
11. Hepatitis
12. Arbo
13. Retro
14. Slow-viruses
15. Oncogenic virus
16. Miscellaneous virus

UNIT – VII: Mycology

1. Classification of fungi
2. Fungal Mycotoxins
3. Pathogenesis & Lab diagnosis of Mycotic infections
4. Superficial Mycosis
5. Cutaneous Mycosis
6. Subcutaneous Mycosis
7. Systematic Mycosis
8. Opportunistic Mycosis and common lab contaminants
9. Antifungal Agents

UNIT- VIII: Clinical Microbiology

1. C.N.S infection
2. Respiratory Infections
3. Urinary Tract Infection
4. Gastro intestinal Infection
5. Genital Tract Infection
6. Congenital Infection
7. Infections of Eye, Ear & Skin
8. Infections of Cardiovascular System
9. P.U.O
10. Zoonotic Infections

UNIT – IX: Applied Microbiology

1. Collection , Transport and Disposal of Specimens
2. Environmental Microbiology (Food, Water, Milk and Air)
3. Hospital Infections Prevention & Control
4. Microbial Control- anti microbial susceptibility testing

5. Bio medical waste management
6. Basic molecular biology related to infections
7. Emerging and reemerging infections - Bio Terrorism

UNIT – X: Recent Advances in Microbiology

1. Advanced Molecular Techniques in Relation to Diagnosis of Infectious diseases
2. Scope of Medical Microbiology
3. Automation in Microbiology
4. Anti microbial resistance and antibiotic policy
5. Newer Vaccines
6. Quality Control, Audit and Accreditation of Standard Microbiology Laboratory
