1.3 Pharmaceutical Micribiology

1. Introduction to microbiology and scope, history.
2. Classification of Microbes and their taxonomy, bacteria, viruses, protozoa, fungi, actinomyetes, Rickettssia, Spirocheates.
3. Nutrition, Cultivation, Isolation and Identification of Bacteria, Viruses, Protozoa and Fungi.
4. Microbial genetics & variations, bacterial enzymes.
5. Infection and factors influencing infections, Host microbe-interaction, Natural resistance and non-specific defence mechanism. Theoretical aspects of immunity.
6. Common diseases, their mode of transmission, methods of control, causative-organism & their treatment and precise knowledge of the following diseases- Rheumatic fever, Pneumonia, Gonorrhoea, Cerebrospinal- Meningitis, Diphtheria, Typhoid fever, Bacillary and Amoebic dysentery, Cholera, Plague, Influenza, Pertussis, Whooping- Cough, Gas-Gangrene, Tetanus, Tuberculosis, Leprosy , Relapsing fever, Syphillis, Rickettsia, Rabies, Poliomyelitis, Dangue, Small pox, Chicken pox, Measles, Mumps and Malaria.
7. Control of microbes by physical and chemical methods.
8. Sterilization, different methods, evaluation of sterilization methods, Sterility testing of pharmaceutical products.
9. General methods of preparation, standardization, preservation, storage and uses of vaccine, sera & diagnostic agents- Diphtheria Antitoxin, Gasgangrene Antitoxin, Tetanus antitoxin, Chloera vaccine, plague vaccine, B.C.G. vaccine, D.P.T. vaccine, Oral Polio vaccine, Measels vaccine, Small pox vaccine, Typhoid vaccine, Typhus vaccine, Yellow fever vaccine, Whooping cough vaccine, Anti-Diphtheria serum, gas-gangrene serum,anti rabies serum, anti venom serum.
10. \Microbiological standardization of antibiotics and vitamins.
11. \industrial microbiology: Introduction, scope fermentation technology, production of alcohols, acetic acid ,citric acid,Penicillins, tetracycline.

Practicals:

1. General knowledge of \Microscope.
2. Laboratory preparation of culture media, isolation and maintenance of pure culture.
3. Identification of bacteria- Morphological and cultural characteristics and also of the other micro organisms.
4. Test of sterility of apparatus, injections, transfusions, oils and powders etc.
5. Evaluation of antiseptics and disinfectants.
6. Test for the potency of antibiotics.

7. Bacteriological examination of water, milk and food products.

Books Recommended:

1. Frobisher- Text book of Micribiology.
2. Michal, chan and Kring- Text book of Microbiology, McGraw Hills.
3. Cooper & Gunn- Tutorial Pharmacy.
4. N.C. Dey, Medical Bactriology.
5. Pharmacopoeis of India, Britain, and U.S.A.
6. Remingtons Pharmaceutical \sciences.
7. Prescott & Dunn- Industrail Microbiology.
8. Salle – Laboratory Manual of Bacteriology.
9. Casida L.E. – Industrial Microbiology, Tata McGrow Hill book Company, Bombay