MCT-VII

II

COMMON COMMUNICABLE DISEASES 5 Week

DETAILED CONTENTS:

1. TUBERCULOSIS
   - 1.1 Agent factors, Host factors and Environmental factors
   - 1.2 Mode of transmission
   - 1.3 Control of Tuberculosis

2. POLIOMYELITIS
   - 2.1 Agent factors, Host factors and Environmental factors
   - 2.2 Mode of Transmission
   - 2.3 Prevention of Poliomyelitis
   - 2.4 Difference between IPV (Inactivated Polio Vaccine) and OPV(Oral Polio Vaccine)

3. TYPHOID FEVER
   - 3.1 ~~Typhoid fever~~ Agent factors, Host factors and Environmental factors
   - 3.2 Mode of transmission
   - 3.3 Control of Typhoid fever

4. CHOLERA
   - 4.1 Agent factors, Host factors and Environmental factors
   - 4.2 Carriers in Cholera.
   - 4.3 Laboratory diagnosis of Cholera
   - 4.4 Mode of transmission
   - 4.5 Control measures of Cholera

5. Acute DIARRHOEAL DISEASES
   - 5.1 Causative agents
   - 5.2 Host factors
   - 5.3 Mode of transmission
   - 5.4 Control measures of Diarrhoeal Diseases

6. VIRAL HEPATITIS
   - A) HEPATITIS A
     - A.1 Agent factors, Host factors and Environmental factors
     - A.2 Mode of transmission
     - A.3 Prevention of Hepatitis A
   - B) HEPATITIS B
     - B.1 Agent factors and Host factors
     - B.2 Modes of transmission
     - B.3 Prevention of Hepatitis B

7. HIV AND AIDS(ACQUIRED IMMUNE DEFICIENCY SYNDROME)
   - 7.1 Agent factors, Host factors ~~and Environmental factors~~
   - 7.2 Mode of transmission
   - 7.3 Clinical manifestation
   - 7.4 Diagnosis of AIDS
   - 7.5 Control of AIDS

8. SEXUALLY TRANSMITTED DISEASES (STD)
   - 8.1 Agent factors, Host factors and social factors
   - 8.2 Control of Sexually transmitted diseases
   - 8.3 Intervention strategies

9. RABIES
   9.1 Agent factors and Host factors
   9.2 Mode of transmission
   9.3 Rabies in Man
   9.4 Prevention of Human Rabies
   9.5 Vaccines for Immunization of man
   9.6 Rabies in Dogs.

10. PLAGUE
   10.1 Agent factors, Host factors and Environmental factors
   10.2 Human Plague
   10.3 Disease in Man
   10.4 Mode of transmission
   10.5 Laboratory Investigations
   10.6 Prevention and Control of Plague

11. DENGUE SYNDROME
   11.1 Different types
   11.2 Criteria for diagnosis of Dengue Haemorrhagic fever(DHF)
   11.3 Control measures

12. TETANUS
   12.1 Agent factors, Host factors and Environmental factors
   12.2 Mode of transmission
   12.3 Prevention
      - Active Immunization
      - Passive Immunization
   12.4 Prevention of Tetanus after injury and Neonatal tetanus.

13. MALARIA
   13.1 Agent factors, Host factors and Environmental factors
   13.2 Mode of transmission
   13.3 Prevent

C O M P U T E R A P P L I C A T I O N

2 week

DETAILED CONTENTS:

1. INTRODUCTION TO COMPUTERS:
   - 1.1 Definition of Computer
   - 1.2 Application in Medical fields
   - 1.3 Architecture of Computer
   - 1.4 Various Input/Output Devices
   - 1.5 Storage Devices
     - a) Primary Storage Devices (RAM), ROM
     - b) Secondary Storage Devices (HDD, Floppy, CD-ROM)
   - 1.6 Hardware and Software Definition and differences
   - 1.7 Various categories of software
     - a) System software
     - b) Application software
   - 1.8 Types of Computers
     - a) Basis of Size and Speed(Mini, Macro, Mainframe, Supercomputer)
     - b) Mode of Data presentation(Digital,Analog,Hybrid)

2. INTRODUCTION TO OPERATING SYSTEM :
   - 2.1 Definition
   - 2.2 Functions of an operating system
   - 2.3 Different types of an operating system

3. MICROSOFT-DISK OPERATING SYSTEM(MS-DOS):
   - 3.1 Definitions of various executable files
   - 3.2 Booting the system with various secondary storage systems
   - 3.3 Creation and working with file
   - 3.4 Storing and Retrieving File (Data) into and from Secondary Storage Devices
   - 3.5 Creation of Auto executable Batch File
   - 3.6 Internal commands
   - 3.7 External commands

4. INTRODUCTION TO WINDOWS OPERATING SYSTEM:
   - 4.1 Generation of Windows family
   - 4.2 Difference between MS-DOS and Windows
   - 4.3 Terminology used in Windows
   - 4.4 Search in Windows
   - 4.5 Creation of Folders, Shortcuts
   - 4.6 Properties of Windows

5. MICROSOFT-OFFICE:
   - 5.1 Various parts of MS-Office
   - 5.2 Uses
   - 5.3 Microsoft-Word (MS-WORD)
     1) Opening a document
     2) Editing a document
     3) Saving a document
     4) Retrieving of document and printing of Document
     5) Finding the particular text in the file
     6) Description of various tool Bars and working with the
     7) Creation of Table and working with them
     8) Grammer checking
     9) MAIL-Merge

6. MICROSOFT-POWERPOINT:

6.1 Introduction
6.2 Use of Powerpoint
6.3 Creation of a Slide
6.4 Inserting Images on Slide and creation of Multiple slides
6.5 Slide Show
6.6 Animation effects for Slide show
6.7 Saving and Retrieving of Slide
6.8 Various Toolbars and Importance of them

7. MICROSOFT- ACCESS:

7.1 Introduction to D B M S
7.2 Terminology used in D B M S
7.3 Introduction to DATATYPE and DATASHEET VIEW
7.4 Creation of Table
7.5 Inserting Data, Editing Data etc, various table operations
7.6 Forms
7.7 Reports

8. INTRODUCTION TO COMPUTER NETWORKS AND INTERNET:

8.1 Definition of Computer Networks
8.2 Terminology used in Networks
8.3 Different types of Networks
8.4 Introduction and Definition of Internet
8.5 Terminology used in Internet(WWW,Homepage etc)
8.6 Definition of Browser and different Browsers
8.7 Website Address, opening of a Homepage, Working knowledge with Websites
8.8 Use of Search Engine
8.9 Various methods to search for the Information
8.10 E-Mail with details
8.11 Procedure for Downloading the Instrument Software

COMPUTER (PRACTICAL)

C O M P U T E R (P R A C T I C A L S) 6 Practical/Week

D E T A I L E D C O N T E N T S:

1. Internal and External Commands of MS-DOS
2. Creation of AUTOEXE. BAT
3. Creation of a New Document and changing of font, Fontsize, Cut, Copy, Paste, Alignment
4. Insertion of objects, wopking with Word Art, Various shapes
5. Searching for Text in the Document, Grammer checking, Replacing the text, Word count.
6. MAIL - MERGE
7. Creation of Table and working with it in the MS - WORD
8. Creation of Slides useful for Medical sciences and Slide show
9. Creation of Table and various operations on it in MS - ACCeSS
10. Creation of Forms and working with them
11. Reports creation
12. Search for Information in the Internet.

M E D I C A L B I O T E C H N O L O G Y 4/Week

DETAILED CONTENTS:

1. Introduction to Medical Biotechnology

2. PROOF OF GENETIC MATERIAL
   - 2.1 Griffith's experiment
   - 2.2 Avery Macleod and Mc Carty

3. COVELLENT STRUCTURE OF DNA AND RNA

4. WATSON/CRICK DNA DOUBLE HELIX

5. DNA replication, transcription and Translation

6. GENETIC TRANSFER IN PROKARYOTES(BRIEFLY):
   - 6.1 Transformation
   - 6.2 Transduction
   - 6.3 Conjugation

7. RECOMBINATION DNA TECHNOLOGY:
   - 7.1 Introduction
   - 7.2 Role and Properties of Plasmid DNA
   - 7.3 Role of different types of enzyme in cloning procedure
   - 7.4 a) Restriction Endonuclues
   - 7.5 b) DNA Ligase
   - 7.6 c) Phosphatase
   - 7.7 d) Taq Polymerase

8. DIFFERENT TECHNIQUES IN CLONING PROCEDURE:
   - 8.1 Plasmid DNA isolation
   - 8.2 Transformation
   - 8.3 Ligation
   - 8.4 Phosphatase treatment
   - 8.5 Agarose Gel Electrophoresis
   - 8.6 Southern blotting
   - 8.7 Northern blotting
   - 8.8 Western blotting

9. DNA based diagnosis like PCR etc.

M E D I C A L L A B I N S T R U M E N T S 4/week

DETAILED CONTENTS:

1. Introduction to different Medical Laboratory Instruments

2. Basis Principles, USE, CARE AND OPERATION OF THE FOLLOWING INSTRUMENTS:
   - 2.1 Different types of Autoclave (Vertical, Horizontal steam jacketed)
   - 2.2 Seitz filter, membrane filter
   - 2.3 Colorimeter
   - 2.4 Hot Air Oven
   - 2.5 Water Bath
   - 2.6 Incubator
   - 2.7 Compound Microscope, Phase contrast and Flurosecences Microscope
   - 2.8 PH Meter
   - 2.9 Distillation Plant
   - 2.10 Balance (Physical, Chemical and Electrical)
   - 2.11 Microtome
   - 2.12 E.C.G. Machine

3. PRINCIPLE AND APPLICATION OF FOLLOWING INSTRUMENTS AND THEIR PRECAUTION
   - 3.1 Centrifuge (Ordinary)
     1) Ordinary centrifuge
     2) Microcentrifuge
     3) High Speed centrifuge
     4) Cold centrifuge
     5) Ultra centrifuge
   - 3.2 Different types of Incubator
     1) B.O.D
     2) CO2
     3) Orbital shaking
   - 3.3 Vaccuum Oven
   - 3.4 Laminar Flow Hood, different types
   - 3.5 Lyophilizer
   - 3.6 Colony Counter
   - 3.7 Spectrophotometer
   - 3.8 Semi-Autoanalyser and Autoanalyser
   - 3.9 Blood Cell Counter
   - 3.10 Blood gas and Blood Electrolyte analyser
   - 3.11 Different types of Freezer:
     1) Ordinary
     2) -20°C
     3) -70°C
   - 3.12 Tissue Processing Unit

MCT-VI

1

PUBLIC HEALTH AND HYGIENE (PHH) 5/week

DETAILED CONTENTS:

1. WATER
   - 1.1 Safe and wholesome water
   - 1.2 Sources of water supply
   - 1.3 Water pollution
   - 1.4 Criteria for water quality
   - 1.5 Physical, Chemical and Bacteriological examination of water

2. AIR POLLUTION
   - 2.1 Sources of Air pollution
   - 2.2 Indicators of Air pollution
   - 2.3 Health effects of Air Pollution
   - 2.4 Disinfection of Air

3. RADIATION
   - 3.1 Sources of Radiation
   - 3.2 Types of radiation
   - 3.3 Radiation Units
   - 3.4 Biological effects of radiation
   - 3.5 Radiation protection

4. DYNAMICS OF DISEASE TRANSMISSION
   - 4.1 Sources and Reservoir
     - Human reservoir
     - Animal reservoir
     - Reservoir in non-living things
   - 4.2 Modes of transmission
     - Direct transmission
     - Indirect transmission

5. INSECTICIDES:
   - 5.1 Classification of Insecticides
   - 5.2 Brief descriptions of the insecticides commonly used. (DDT, BHC, Pyrethrum, Malathion etc.)
   - 5.3 Toxicity of insecticides

6. IMMUNIZATION:
   - 6.1 Immunizing agents (Brief description)
     - Vaccines
     - Immunoglobulins
     - Antisera
   - 6.2 Hazards of Immunization
   - 6.3 Expanded Programme on Immunization (EPI)
   - 6.4 Immunization Schedule

7. FOOD SURVEILLANCE:
   - 7.1 Foodborne Diseases
   - 7.2 Food toxicants
   - 7.3

8. FOOD POISONING
   8.1 Types of food poisoning
   8.2 Investigations of food poisoning
   8.3 Prevention and control of food poisoning

9. HEALTH EDUCATION
   9.1 Objectives of Health education
   9.2 Content of health education
   9.3 Communication in health education
   9.4 Barriers of communication

10. NON-COMMUNICABLE DISEASES
   10.1 Non-communicable disease risk factors
   10.2 CORONARY HEART DISEASE (CHD)
        - risk factors
        - Prevention of Coronary Heart Disease
   10.3 HYPERTENSION
        - Classification
        - Risk factors for hypertension
        Prevention of hypertension
   10.4 CANCER
        - Causes of cancer
        - Cancer control measures
        Epidemiology of selected cancers
            a) Oral cancer
            b) Cancer of Cervix
            c) Breast cancer
            d) Lung cancer
   10.5 DIABETIS MELLITUS:
        - Classification
        - Screening for Diabetes
        Prevention and care of Diabetic Mellitus

11. FAMILY PLANNING:
   11.1 Scope of family planning services
   11.2 Contraceptive methods (Briefly)
        - Spacing methods
        - Terminal methods
   11.3 Medical termination of pregnancy Act 1971

12. BIO-MEDICAL WASTE MANAGEMENT:
   12.1 Types of Bio-medical waste/hospital waste
        - Liquid
        - Semi liquid
        - Solid
   12.2 Health hazards of biomedical waste
   12.3 Methods of proper disposal.