ELEMENTARY PHYSICS & CHEMISTRY (THEORY)
Course Code: PMS.001T
Credit Hours: 3
Semester: I

SECTION I: ELEMENTARY PHYSICS

UNIT – I: PHYSICAL WORLD
Different System of Units (CGS and SI)
Fundamental Quantity
SI Units
UNIT - II: MATTER AND ITS NATURE BEHAVIOUR
Matter – Solid, Liquid and Gas; Characteristics
Change in state of matter: Evaporation, condensation and sublimation
UNIT –III: MOTION
Rest and Motion
Speed and Velocity
Acceleration
UNIT – IV: FORCE AND LAWS OF MOTION
Balanced and unbalanced Force
First law of Motion
Second law of motion
Third Law of Motion
UNIT –V: OPTICS
Reflection of light
Refraction of light
Image formations (By mirror and lens)
Magnification, Power of a lens
Refraction and dispersion of light through a prism.
Scattering of light – blue colour of the sky and reddish appearance of the sun at sunrise and sunset
UNIT – VI: ATOM AND NUCLEI
Composition and size of nucleus, atomic masses, isotopes, isobars; isotones.
Radioactivity – alpha, beta and gamma particles/rays and their properties
Applications of radioactivity.
Electromagnetic Waves.

SECTION II: ELEMENTARY CHEMISTRY

UNIT – I: SOME BASIC CONCEPTS OF CHEMISTRY

General Introduction: Importance and scope of chemistry.

Elements, Compounds, Mixture: Heterogeneous and homogenous

UNIT –II: STRUCTURE OF ATOM

Thompson Model & its Limitation

Rutherford's model & Its limitation

Bohr's Model & Its Limitation

Dalton's Atomic Theory

Concept of Shells and subshells & Orbital Rule

UNIT – III: MODERN PERIODIC TABLE

Significance & Classification upto 20 elements (Periodic Table)

Atomic Number, Valency & Electronic configuration, Atomic & molecular masses

Laws of Chemical Combination, atoms and molecules.

UNIT –IV: ACID, BASE AND SALT

Definitions and General Properties

Concept of pH and its importance in everyday life

UNIT – V: CHEMISTRY IN EVERYDAY LIFE

Chemicals in medicines – analgesics, tranquilizers, antiseptics, disinfectants, antimicrobials, antifertility drugs, antibiotics, antacids, antihistamines.

Chemicals in food – preservatives, artificial sweetening agents, elementary idea of antioxidants.

Cleansing agents – soaps and detergents, cleansing action.

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

HUMAN ANATOMY & PHYSIOLOGY (THEORY)
Course Code: PMS.002T
Credit Hours: 3
Semester: I

UNIT -I
Skin & sense organs- Eye, Ear, Nose, Tongue (taste buds).

UNIT - VI
Digestive system- Parts of gastrointestinal tract and associated glands. Digestion and absorption of food

UNIT -VII
Respiratory system- Parts of respiratory system. Functions of lungs, mechanism of breathing & exchange of gases in the lungs, Lung Capacity

UNIT -VIII
Urinary system- Parts of urinary system. Structure and function of kidney and urinary bladder, Mechanism of Urine Formation

UNIT - V
Circulatory system- Structure of heart, function of heart and blood vessels, Brief introduction of heart rate, Pulse rate, Blood Pressure

UNIT – X
Nervous system- Parts of Brain, Cerebrospinal Fluid (C.S.F), spinal cord. Neurons & its functions, functions of CNS, ANS,

UNIT - III
Skeletal system-Structure of Bones, Bones of cranium, face, vertebral column, Upper & lower limbs, fracture of bones, movements of joints.
Muscular System- Structure and types of muscles.

UNIT - IV
Reproductive system- Brief introduction of male & female reproductive organs and associated hormones.

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

GENERAL MICROBIOLOGY (THEORY)
Course Code: PMS.003T
Credit Hours: 3
Semester: I

UNIT- I : INTRODUCTION TO MICROBIOLOGY

Branches of microbiology

Scope of microbiology

History of microbiology: Contributions of Louis Pasteur and Robert Koch

Classification of micro-organisms:

- Bacteria: - Definition, bacterial anatomy & morphological classification
- Viruses: - Definition, general properties & morphology
- Fungi: - Definition, general properties
- Protozoa: - Definition, general properties

UNIT –II: GROWTH & NUTRITION OF BACTERIA

Nutritional types of bacteria, Growth requirements, Bacterial growth curve, Factors effecting the bacterial growth

UNIT-ii: STERILIZATION & DISINFECTION

Various physical & chemical methods of control of microbial growth

UNIT- IV INSTRUMENTS

Brief Study of instruments used in microbiology laboratory: Incubator, Centrifuge, Light Microscope, Hot Air Oven, Autoclave, anaerobic jar, water bath, laminar air flow

UNIT –V: STAINING

Simple Staining and differential staining: Gram Staining, Acid Fast Staining

UNIT- VI: INTRODUCTION TO LAB MANAGEMENT

Definition, concept of lab management, recording of specimen & maintenance of lab records, safety measures in microbiology lab with universal safety precautions, Quality control in microbiology lab

GENERAL MICROBIOLOGY (PRACTICAL)
Course Code: PMS.003P
Credit Hours: 2

- Operation of autoclave for sterilization
- Dry sterilization methods
- Preparation of smears
- Simple staining, Gram staining and acid fast staining
- Collection ,Transport & preservation of different specimen

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1st ,2nd Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

GENERAL BIOCHEMISTRY (THEORY)
Course Code: PMS.004T
Credit Hours: 3
Semester: I

UNIT – I : INTRODUCTION TO BIOCHEMISTRY

Biochemistry: the molecular aspects of living organisms

The Atom and Chemical bond: Periodic Table (Up to 20 elements)

Brief Descriptions of 4 functional groups (only structures): alcoholic, Ketone, aldehyde, Carboxyl group.

UNIT – II: BRIEF DESCRIPTION OF VARIOUS BIOMOLECULES

Carbohydrates: General structure of monosaccharide's: Glucose & fructose (Linear form), Classification of monosaccharide's.

Proteins: General structure of Amino Acids, Classification of Amino acid, their properties**.** Brief description of Primary, Secondary, Tertiary & Quaternary Structure.

Lipids: General structure: Saturated and unsaturated Fatty Acids. Classification & their general properties

Nucleic Acid: General Structure of Purine & Pyrimidine. General structure of sugar: Ribose & deoxyribose, Difference between DNA & RNA.

Enzyme: Nomenclature & Classification. Biological Role of Enzymes.

Electrolytes: Source, function & deficiency symptoms of Sodium, Potassium, Calcium, phosphorus, Iron, Zinc & Chloride in human body.

UNIT – III

Glassware: Types, Cleaning & Maintenance of glassware

Safety Measures in Biochemistry & First Aid

GENERAL BIOCHEMISTRY (PRACTICAL)
Course Code: PMS.004P
Credit Hours: 2

- Identification & Use of Common Laboratory Glassware
- Study of various Requisition slip of biochemistry lab
- To Study various Hazards Symbols used in the Laboratory

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1^{st} ,2^{nd} Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

CLINICAL HEMATOLOGY & BLOOD BANKING (THEORY)
Course Code: PMS.005T
Credit Hours: 3
Semester: I

UNIT – I: BLOOD
Hematopoiesis**:** origin and developments of cells
Composition & various components.
Types & functions of various blood cells
UNIT- II: HAEMOGLOBIN
Structure of hemoglobin
Types of Hb
Function of Haemoglobin
UNIT- III: BLOOD BANKING:
Introduction
Blood Groups
Techniques of blood grouping: - ABO Grouping, RH blood Grouping,
Blood Transfusion: Technique and Reactions
Selection of Donors & Collection of Blood, Anticoagulants, Transport & Storage
Centrifuge/Technique and uses
UNIT- IV: DISORDERS OF BLOOD
Anemia and its types
Hemophilia

CLINICAL HEMATOLOGY & BLOOD BANKING (PRACTICAL)
Course Code: PMS.005P
Credit Hours: 2

- Collection of Blood (capillary/vein puncture)
- Preservation & transport of blood

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1^{st} ,2^{nd} Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

ELEMENTARY BIOLOGY (THEORY)
Course Code: PMS.006T
Credit Hours: 2
Semester: I

UNIT – I: BIODIVERSITY

Need for classification, Characteristics of Life

Levels of Organization for Living things, Binomial Nomenclature

Tools for study of Taxonomy: Museums, Zoos, Herberia, Botanical Gardens

Five Kingdom Classification - Salient features

UNIT – III : HUMAN PHYSIOLOGY

Digestion and absorption:

Alimentary canal and digestive glands; Role of digestive enzymes and gastrointestinal hormones; Peristalsis, digestion, absorption and assimilation of proteins, carbohydrates and fats;

Calorific value of proteins, carbohydrates and fats , Egestion.

Breathing and Respiration: Respiratory organs, Mechanism of breathing and its regulation in humans– Exchange of gases, transport of gases and regulation of respiration Body fluids and circulation.

Blood: Composition of blood, blood groups, coagulation of blood; Composition of lymph and its function;

Human circulatory system– Structure of human heart and blood vessels; Cardiac cycle, cardiac output, ECG; Double circulation

Excretory products and their elimination, Modes of excretion – Ammonotelism, ureotelism, uricotelism;

Human excretory system–structure and function; Urine formation, Osmoregulation; Regulation of kidney function– Renin-angiotensin, Atrial Natriuretic Factor, ADH and Diabetes insipidus

Locomotion and Movement: Types of movement – ciliary, flagellar, muscular;

Skeletal muscle – contractile proteins and muscle contraction; Skeletal system and its function

Neural control and coordination:

Neuron and nerves; Nervous system in humans– central nervous system, peripheral nervous system and visceral nervous system; Generation and conduction of nerve impulse; Reflex action.

Chemical coordination and regulation: Endocrine glands and hormones; Human endocrine system-Hypothalamus, Pituitary, Pineal, Thyroid, Parathyroid, Adrenal, Pancreas, Gonads; Mechanism of hormone action (Elementary Idea); Role of hormones as messengers and regulators, Hypo-and hyperactivity and related disorders

UNIT - V: ECOLOGY & ECOSYSTEM

Organism & Environment: Habitat & Niche

Population Interaction: Mutualism, Competition, Predation & Parasitism

Population Attributes: Growth Rate, Birth Rate, Death Rate

Ecosystem: Patterns, Components; Productivity& Decomposition; Energy Flow; Pyramids of number, Biomass, energy

Nutrient Cycling: Carbon, Phosphorus, Nitrogen

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

INTRODUCTORY BIOLOGY (THEORY)
Course Code: PMS.007T
Credit Hours: 2
Semester: I

UNIT-I: LIVING WORLD

- Introduction to Biology
- Branches of Biology:- Anatomy, Biochemistry, Physiology, Biophysics, Biotechnology, Botany, Cell Biology , , Epidemiology, Genetics, Histology, Homology, Microbiology, Pathology, Parasitological, Pharmacology, Physiology, Virology, Zoology, Molecular Biology, Mycology, Neurobiology, Developmental Biology.
- Scope of Biology & Career Options.
- Characteristics of Living Organisms: Elementary area of Metabolism, Transfer of energy at molecular levels, Open & Closer system, Homoeostasis, Growth & Reproduction, Adaptation Survival & Death.

UNIT –II: CELL AS A BASIC UNIT OF LIFE

Cell Theory

- Difference b/w Prokaryotic cell and Eukaryotic Cell
- Brief Introduction to the cell Organelles and their functions

UNIT –IV: CELL DIVISION

Brief Introduction

- Mitosis
- Meiosis

UNIT – V: MOLECULES OF CELL

- Carbohydrates: Classification& Functions
- Amino Acids(only names):Classification & Functions
- Proteins: Classification, structure & functions
- Lipids: Classification & Functions
- Enzymes: Classification, Properties & functions
- Vitamins: Classification
- Nucleic Acid: Types

UNIT – VI: GENETICS

DNA:

- Chemical properties of DNA
- Nitrogenous Bases(Purines and Pyrimidines)
- Watson & Crick Model of DNA
- Chargaff Rule

RNA:

- Types and their functions
- Difference between DNA & RNA
- Brief introduction to Transduction and Translation

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

ENVIRONMENTAL STUDIES (THEORY)
Course Code: PMS.008T
Credit Hours: 2
Semester: II

UNIT-I : NATURAL RESOURCES

Renewable and non-renewable resources: Natural resources and associated problems.

- Forest resources
- Water resources
- Mineral resources
- Food resources
- Energy resources

UNIT-II : ECOSYSTEMS

- Concept of ecosystems, Structure and function of an ecosystem.
- Producers, consumers and decomposers.
- Energy flow in the ecosystem.
- Food chains, food webs and ecological pyramids.

UNIT-III: ENVIRONMENTAL POLLUTION

- *Definition, Cause, effects and control measures of :* Air pollution, Water pollution, Soil pollution, Noise pollution, Thermal pollution
- Role of an individual in prevention of pollution.
- *Disaster management:* floods, earthquake, cyclone and landslides.

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

CLINICAL MICROBIOLOGY (THEORY)
Course Code: PMS.009T
Credit Hours: 3
Semester: II

UNIT - I : SYSTEMIC BACTERIOLOGY

General account of morphology, clinical manifestations & laboratory diagnosis of: sore throat, diphtheria, meningitis, gonorrhea, urinary tract infections, cholera, bacillary dysentery, tetanus, tuberculosis and leprosy.

UNIT -II : VIROLOGY

Introduction, classification & structure. Replication & cultivation of viruses.

Brief description of manifestations & laboratory diagnosis of Viruses

UNIT -III: MYCOLOGY

Introduction, Classification of fungi, Reproduction & sporulation

Superficial mycoses
Cutaneous mycoses
Systemic mycoses
Opportunistic mycoses

UNIT-IV: PARASITOLOGY

Life cycle, clinical manifestations & lab diagnosis of:

- *E. histolytica*
- *G. intestinalis*
- *P. vivax*
- *T. solium & T. saginata*

CLINICAL MICROBIOLOGY (PRACTICAL)
Course Code: PMS.009P
Credit Hours: 2

- Collection of blood for bacteriological examination
- Collection of sputum specimen for AFB
- Collection of urine specimen in UTI
- KOH mount of specimen
- LPCB mount
- Microscopic examination of specimen

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1^{st} ,2^{nd} Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

CLINICAL BIOCHEMISTRY (THEORY)
Course Code: PMS.010T
Credit Hours: 3
Semester: II

UNIT- I

Collection & Preservation of Specimen
Maintenance of lab record
Disposal Of specimen

UNIT – II: URINE ANALYSIS

Routine Examination OF Urine: Physical & Microscopic

- Chemical Examination:
  - Glucose
  - Protein
  - Bile Pigment
  - Ketone Bodies
  - Specific Gravity

UNIT- III : BLOOD ANALYSIS

Separation of Serum & Plasma

- Examination:
  - Glucose
  - Urea
  - Creatinine
  - Uric acid
  - Bilirubin
  - SGOT/SGPT
  - Protein

UNIT-IV

Vitamins: Sources, Functions & their Deficiency Diseases

Minerals: Sources, Functions & their Deficiency Disease
(Iron, Calcium, Magnesium, Sodium, Potassium, Phosphorus & Zinc, Molybdenum, Chloride, Iodine, Fluorine)

CLINICAL BIOCHEMISTRY (PRACTICAL)
Course Code: PMS.010P
Credit Hours: 2

- Specimen collection & Preservation.
- Physical examination of Urine.
- Chemical examination of Urine for estimation of :
  - Glucose
  - Protein
  - Bile Pigment
  - Ketone Bodies
  - Specific Gravity
  - GTT
- Examination of Blood for estimation of:
  - Glucose
  - Urea
  - Creatinine
  - Uric acid
  - Bilirubin
  - SGOT/SGPT
  - Protein

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1^{st} ,2^{nd} Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

HISTOTECHNOLOGY (THEORY)
Course Code: PMS.011T
Credit Hours: 3
Semester: II

UNIT- I

- General description & uses of common equipments in histopathology laboratory, maintenance
- Laboratory hazards and safety precautions.

UNIT- I I

- Introduction to Histotechnology
- Histology: Automated histology equipments
- Procedures in examination of Tissue preparation (In Brief):
- Fixation of tissues: Classification of Fixatives,
- Decalcification, methods of decalcification
- Tissue Processing: dehydration, clearing, infiltration, embedding
- Mounting of Sections, Frozen Sections
- Decalcification

UNIT- III

- *Microtomes:* Introduction**,** Types and uses
- Working principle and maintenance of different microtomes

UNIT - IV

- *Staining:* Preparation of stains, pre & post staining procedure
- Stains: Various staining procedures
  (H&E Stain, Giemsa Stain, PAP Stain)

HISTOTECHNOLOGY (PRACTICAL)
Course Code: PMS.011P
Credit Hours: 2

- Reception and reporting
- Gross examination of specimen
- Processing of tissue
- Fixation of tissue
- Study of different type of microtome
- Sharpening of microtome knife
- Section Cutting
- H&E Staining
- PAP staining
- Preservation of different histopathological specimen
- Preparation of permanent slides

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1st ,2nd Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

COMMUNICATION SKILLS
Course Code: PMS.012T
Credit Hours: 2
Semester: II

UNIT – I
Essentials of grammar
Parts of speech:

- Articles
- Nouns
- Pronouns
- Adjective
- Verb/Adverb
- Preposition, Conjunctions, Interjections

UNIT- II
Nature, scope & process of communication:

- Definition
- Process
- Various Models
- Elements
- Essential Flow of Communication
- Media of Communication
- Barriers/Factors inhibiting communication.

UNIT – III
Formal Conversations:
Meetings; Duties of participants; Interviews; Group Discussions.
UNIT- IV
Essay & Precis Writing

- Comprehension

UNIT – V
Formal & Informal Letters.

SCHEME OF EXAMINATION - THEORY

Type of Questions	Total No. of Questions	No. of Questions to be attempted	Marks (each Question)	Subtotal
SEC –A (Comprehensive)	1	1	1	10
SEC – B (Short Answer)	8	5	2	10
SEC – C (Essay writing)	3	1	10	10
SEC-D (Precis writing)	1	1	10	10
SEC-E (Letter writing)	2	1	10	10
			Total Marks	**50**

COMPUTER BASICS (THEORY)
Course Code: PMS.013T
Credit Hours: 2
Semester: II

UNIT –I

Input and Output UNITs: Their functional characteristics, main memory, cache memory read only memory, overview of storage devices – floppy disk, hard disk, compact disk, tape.

Computer Networks and Communication: Network types, Network topologies, Network communication devices, Physical communication media, TCP/IP.

Internet and its Applications: E-mail, Telnet, FTP, WWW, Internet chatting

UNIT-II

World Wide Web (www) - History, Working, Web Browsers, Its functions, Concept of Search Engines, Searching the Web, HTTP, URLs, Web Servers, Web Protocols.

UNIT-III

MS Office: word, paint , power point & excel; acrobat reader

UNIT-IV

Computer Viruses: Introduction, working of viruses, Categorization of computer viruses, Antivirus & its working, Virus identification techniques.

UNIT –V

Information system: definition, components & types of information system

Operational support systems & support to knowledge work

Management support systems

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

VIROLOGY & MYCOLOGY (THEORY)
Course Code: PMS.014T
Credit Hours: 3
Semester: III

SECTION-I: VIROLOGY

UNIT –I: Introduction

- Morphology of Virus
- Replication of Viruses
- Pathogenesis of Viral Infections

UNIT –II: Methods of Cultivation of Viruses

- Animal Inoculation
- Inoculation of Embryonated Eggs

UNIT –III: Diagnosis of Viral Disease

- Collection of Specimen for Virology
- Transport & Storage of Specimen for virology

UNIT –IV: Viral Diseases

- *DNA Viruses:* Pox viruses, Herpes Viruses, Adenoviruses, Papovaviruses, Parvoviruses
- *RNA Viruses:* PicornaViruses, Orthomyxoviruses, Paramyxoviruses, Rhabdoviruses,*Hepatitus Viruses*
- *Retroviruses*: HIV

SECTION-II: MYCOLOGY

- Morphology and Structure of fungi
- Classification of fungi
- Nutrition and cultivation of fungus
- Cutaneous & Subcutaneous and Systemic Mycosis (in brief)
- Lab diagnosis of fungal Infections
- Opportunistic fungal infections

VIROLOGY & MYCOLOGY (PRACTICAL)
Course Code: PMS.014P
Credit Hours: 2

- Viral Serology
- Lactophenol – cotton blue staining
- KOH Preparation
- Preparation of SDA

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1st ,2nd Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

SYSTEMIC BACTERIOLOGY (THEORY)
Course Code: PMS.015T
Credit Hours: 3
Semester: III

Brief Discussion about: *Morphology, culture, diseases and laboratory diagnosis*

- Staphylococci (*Staph.aureus*)
- Streptococci (*Strep.pyogenes*)
- Pneumococci (*P.pneumoniae*)
- Neisseria (*N.gonorrhoeae* & *N.meningitidis*)
- Corynebacterium (*C.diphtheriae*)
- Mycobacteria (*M.tuberculosis* & *M.leprae*)
- Clostridia (*Cl.perfringens,Cl.tetani* & *Cl.botulinum*)
- Bacillus (*B.anthracis*)
- Salmonella (*S.typhi* & *S.paratyphi*)
- *Esch.coli*
- Klebsiella (*K.pneumoniae*)
- Proteus
- *Vibrio Cholerae*
- Pseudomonas (*P.aurogenosa*)

SYSTEMIC BACTERIOLOGY (PRACTICAL)
Course Code: PMS.015P
Credit Hours: 2

- Conducted as per theory syllabus

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1^{st} ,2^{nd} Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

IMMUNOLOGY & SEROLOGY (THEORY)
Course Code: PMS.016T
Credit Hours: 3
Semester: III

UNIT-I: Introduction

Immunity - Definition and classification
General Principles of Innate & Acquired Immunity.
Immune Response **-** Humoral immunity & cell mediated immunity.

UNIT-II: Structure and functions of Immune System

Parts of Immune system
T/B cells, other cells & their functions

UNIT-III: Antigens & Antibodies

Antigen - Definition, classes, properties.
Antibodies/Immunoglobulin's - Definition, Properties,

UNIT-IV: Antigen/Ab Reaction

Features of antigen/antibody Reaction-

- Precipitation
- Agglutination
- ELISA/RIA

IMMUNOLOGY & SEROLOGY (PRACTICAL)
Course Code: PMS.016P
Credit Hours: 2

- WIDAL Test
- VDRL Test
- RA Test
- CRP Test
- Pregnancy Test & HIV Test

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1st ,2nd Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

BLOOD BANK PROCEDURES & HAEMOGLOBINOPATHIES (THEORY)
Course Code: PMS.017T
Credit Hours: 3
Semester: III

UNIT-I: Blood Grouping

- Human Blood Group system
- ABO Subgroups
- Red Cell Antigen, Natural Antibodies
- Hemolytic Disease of Newborn & Prevention
- Principle of Blood grouping, antigen-antibody reaction.
- Agglutination, Haemagglutination, Condition required for antigen antibody reaction.
- Methods for ABO grouping- Slide & Tube Method, Cell grouping, Serum grouping, Rh grouping by slide & tube method.

UNIT-II: Blood Transfusion

- Principal & Practice of blood Transfusion.
- Blood Transfusion service at District level.
- Guide lines for the use of Blood, Appropriate use of Blood, Quality Assurance.
- Antilogous Blood Transfusion practices.

UNIT-III: Blood Donation

- Blood donor requirements, Criteria for selection & rejection, Medical history & personal details, Self-exclusion, Health checks before donating blood, Screening for TTI.

UNIT-IV: Blood Collection

- Blood collection packs.
- Anticoagulants.
- Taking & giving sets in Blood transfusion
- Adverse donor reaction.

UNIT-VI: Storage & Transport

- Storage of blood, Changes in blood after storage, Gas refrigerator, Transportation.

UNIT-VII: Maintenance of Blood Bank Records

- Blood donation record book, Recording results, Blood donor card, Blood bank temperature sheet, Blood bank stock sheet, Blood transfusion request form.

BLOOD BANK PROCEDURES & HAEMOGLOBINOPATHIES (PRACTICAL)
Course Code: PMS.017P
Credit Hours: 2

- Conducted as per theory syllabus

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

SCHEME OF EXAMINATION - PRACTICALS

S. No.	Particulars	Marks
1	Log Book	5
2	Attendance	10
3	Internal (1^{st} ,2^{nd} Hourly & Mid-term)	10
4	Viva-voce	25
	TOTAL MARKS	**50**

COMMUNITY HEALTH
Course Code: PMS.018T
Credit Hours: 2
Semester: III

- General concepts of health and diseases with reference to natural history of disease with pre-pathogenic and pathogenic phase. The role of socio-economic and cultural environment in health and diseases-Epidemiology and scope.
- Public health administration-An overall view of the health Administration set up at centre and state level.
- The National Health Programmes- National Health programmes including tuberculosis, malaria, MCH and HIV/AIDS.
- Health problems in vulnerable groups-Pregnant and lactating women and infants and school going children-occupational groups, geriatrics.
- Occupational Health- Definition, scope-Occupational diseases, prevention of occupational diseases and hazards.
- Social security and other measures for the protection of occupational hazards, accidents and disease. Details of compensation acts.
- Family planning objectives of National family planning methods. A general idea of advantages and disadvantages of the method.
- Mental Health- community aspects of mental health; role of physiotherapists, therapists in mental health problems such as mental retardation etc.
- Communicable disease-An overall view of the communicable disease. Classification according to the principal mode of transmission. Role of insects and their vectors.
- International health agencies.

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**

NUTRITION
Course Code: PMS.019T
Credit Hours: 2
Semester: III

- Introduction to science of nutrition
- Food pattern and its relation to health
- Factors influencing food habits, selection and food stuffs
- Food selection, storage & preservation
- Classification of nutrients – macronutrients and micronutrients
- Proteins – types, sources requirements and deficiencies of proteins
- Carbohydrates sources, requirements & efficiency
- Fats – types, sources, requirements, deficiency and excess of fats
- Water – sources of drinking water, requirements, preservation of water
- Minerals – types, sources, requirements deficiencies of minerals
- Vitamins – types, sources, requirements deficiencies of vitamins
- Planning diets including renal diets

SCHEME OF EXAMINATION - THEORY

Types of Questions	Total No. of Questions	No. of Questions to be attempted	Marks	Subtotal
SEC -A: MCQ's	10	10	1	10
SEC -B: Short Answer Questions	7	5	3	15
SEC -C: Short Essay	7	5	5	25
			TOTAL MARKS	**50**