

First stage			
No.	lecture title	Lecture content	hours
1	Human Biology	The microscope	2
		The cells	2
		Cell division (Mitosis)	2
		Cell division (Meiosis)	2
		The tissues (Single epithelial tissue)	2
		Connective tissue	2
		Muscular tissue	2
		Nervous tissue	2
		Bone & Cartilage	2
		Digestive system(digestion)	2
		Digestive system (Small & Large intestine)	2
		Blood	2
		The Chromosome	2
		Excretory system	2
		Skin	2
2	Analytical Chemistry	Demonstration of some laboratory equipments.	2
		Separation and identification of group 1 cations (individual test).	2
		Analysis of group 1 cations mixture.	4
		Preparation and standardization of an acid.	2
		Determination of the percentage of acetic acid.	2
		Analysis of sodium carbonate and sodium hydroxide mixture.	2
		Determination of chloride by the Mohr method.	2
		Determination of chloride by the Volhard method.	2
Preparation and standardization of 0.1N KMnO ₄ .	4		

4		Determination of ferrous form of iron in Mohr's salt.	2
		Determination of total hardness in tap water.	2
		Gravimetric determination of Nickel.	4
	Computer Sciences	Microsoft Word applications	8
		Microsoft Excel applications	8
		Application of programs for statistical evaluation of data.	8
		Basics for chemical and biological drawings.	6
5	Human Anatomy	Circulatory system: Location of vascular system (Heart, Arteries, Veins)	2
		Circulatory system: Location of lymphatic system (Lymphatic capillary).	2
		Lymphoid tissue: location of the (Thymus gland, Spleen & Lymph nodes)	2
		Lymphoid nodule (MALT) & Tonsils	2
		Nervous system: Central & Peripheral nervous system by location	2
		Respiratory system: -Conducting portion (Nose, Nasopharynx, Trachea Bronchus & Bronchioles). -Respiratory portion (Lung)	2
		Digestive system: -location of different parts of digestive tract (GIT) (Oral cavity, Mouth, Esophagus & Stomach) -Small intestine, Large intestine, Rectum & Anus.	4
		Digestive system: Glands associated with the digestive tract by location (Salivary glands, Pancreas, Liver & Gall bladder).	2

		Endocrine system: -location of the pituitary gland -location of the Adrenal, Thyroid, Parathyroid, Islet of Langerhans & Pineal glands.	2
		Male reproductive system: -location of the testes. -Excretory genital ducts -Excretory genital glands (Seminal vesicles, Prostate & Cowper's glands)	2
		Female reproductive system: -location of ovary, Oviduct, Uterus & Vagina.	4
		Urinary system: -location of the (kidney & nephrone)	4
6	Medical Physics	Explain how to plot graph and make laboratory report.	2
		Optical Fiber Loss (bend) Measurement.	2
		Simple pendulum.	2
		Spectral photometric	2
		Density of liquid.	2
		The focal length of convex lens.	2
		application computer in medical physics	2
		Measurement of Viscosity of liquids.	2
		Ostwald's Viscometer: find viscosity of unknown; find the molecular weight; find concentration of unknown substance.	4
		Measuring surface tension (by capillary rise method and traveling microscope).	2

		Measuring surface tension (differential height capillary method).	2
		Decay curve and half life.	2
		Boyle's Law.	2
		Speed of sound.	2
		Laser application for measurement of single slit.	2
7	Histology	Circulatory system (Artery & Vein)	2
		Lymphatic system (Thymus gland & spleen)	2
		Lymphatic system (Lymph node & Islet of Langerhans)	2
		Nervous system (Cerebral & cerebrum cortex)	2
		Nervous system (Spinal cord)	2
		Respiratory system (Trachea & lung)	2
		Digestive system (Tongue, Esophagus & Stomach)	2
		Digestive system (Small & Large intestine)	2
		Digestive system Digestive system	2
		-Accessory glands of the digestive system (liver & Pancreas)	2
		Endocrine system (Pituitary & Thyroid gland)	2
		Endocrine system (Adrenal & pineal gland)	2
		Male reproductive system (Testes & prostate gland)	2
		Female reproductive system (Ovary & Uterus)	2
		Urinary system (Kidney & Urinary bladder)	2
		Skin (Thick & Thin skin)	2
8	organic chemsity I	Determination of melting point (Known sample).	2
		Determination of melting point (quiz and unknown).	2
		Determination of boiling point (known sample).	2
		Determination of boiling point (quiz and unknown).	2
		Elemental analysis (explanation of basic concepts).	2
		Elemental analysis (known quantity and quality)	2

	sample).	
	Solution and filtration techniques (explanation of basic concepts).	2
	Re-crystallization (known sample).	2
	Re-crystallization (quiz and unknown sample).	2
	Extraction technique (known sample).	2
	Extraction technique (quiz and unknown).	2
	Distillation techniques (known samples).	2
	Distillation techniques (quiz and unknown).	2
	Sublimation technique (known sample).	2
	Sublimation technique (quiz and unknown).	2

Second stage			
المادة	Lecture title	hours	
1	Organic Chemistry II	Solubility Classification (known)	2
		Solubility Classification (tutorial and quiz)	2
		Solubility Classification (unknown)	2
		Identification of alcohols (known)	2
		Identification of alcohols (tutorial and quiz)	2
		Identification of alcohols Elemental analysis (unknown)	2
		Identification of phenol (known)	2
		Identification of phenol (tutorial and quiz)	2
		Identification of phenol (unknown)	2
	Medical Microbiology,	Identification of aldehyde and ketone (known)	2
		Identification of aldehyde and ketone (tutorial and quiz)	2
		Identification of aldehyde and ketone (unknown)	2
		Identification of organic compound (general, known)	2
		Identification of organic compound (general, unknown)	2
		Identification of organic compound (general quiz)	2
		Orientation to the laboratory. Rules of conduct and general safety. Microscopic techniques. Bright-field light microscope.	2
		Examination of stained microorganisms; Smear preparation and simple staining; Gram staining.	2
		The hanging drop slide and bacterial motility; Acid-fast staining procedure.	2
Bacterial spores and endospores staining; Microbiological culture media and sterilization; Methods of inoculation and isolation of pure culture.	2		
Action of dyes and antibiotics; Enzymes assays for some specific microbial enzymes.	2		

	Assays for specific metabolic activities; Acid and gas production from: Carbohydrate fermentation; Triple sugar iron agar test; IMVIC tests.	2
	Systemic bacteriology: Staphylococci spp.	2
	Streptococci species.	2
	Salmonella species.	2
	Shigella species.	2
	Pseudomonas species.	2
	Proteus species.	2
	<i>Escherichia coli</i>	2
	Klebsiella species.	2
	<i>Candida albicans</i> .	2
Physical Pharmacy I	Introduction to physical pharmacy	2
	Expression of concentrations in pharmaceutical preparations.	6
	Two component systems containing liquid phases.	6
	Three component systems.	4
	Tie linear for three component systems.	6
	Buffer solutions	6
Physiology I	Experiments on respiratory system (respiratory rate and volumes).	4
	Introduction to blood physiology.	2
	Blood typing and blood transfusion.	2
	Tutorial.	2
	Packed cell volume.	2

	Determination of hemoglobin concentration.	2
	Blood indices.	2
	Determination of bleeding time and clotting time.	2
	Tutorial.	2
	Blood pressure.	2
	Effect of exercise on blood pressure.	4
	Electrocardiogram (ECG).	2
	Tutorial and review.	2
Organic Pharmaceutical Chemistry II	Identification of aliphatic carboxylic acid (known)	2
	Identification of aliphatic carboxylic acid (tutorial and quiz)	2
	Identification of aliphatic carboxylic acid (unknown)	2
	Identification of aromatic carboxylic acid (known)	2
	Identification of aromatic carboxylic acid (tutorial and quiz)	2
	Identification of aromatic carboxylic acid (unknown) .	2
	Identification of aliphatic amine (known)	2
	Identification of aliphatic amine (unknown)	2
	Identification of aromatic amine (known)	2
	Identification of aromatic amine (known)	2
	Identification of aromatic amine (unknown)	2
	Identification of amine (tutorial and quiz)	2
	Identification of alkyl halide (known)	2
	Identification of alkyl halide (unknown)	2
Identification of organic compound (general unknown and quiz)	2	
Physiology II	Differential W.B.C count	4
	Total W.B.C. count	2
	Tutorial	4
	Red blood cell counting	2
	Platelets counting	2
	Erythrocyte sedimentation rate (ESR)	2
	Tutorial	4
	Insulin regulation of blood glucose	2
	Renal physiology	2
	Some experiments on vision	2
Tutorial and review	4	
Pharmacognosy I	Chromatography.	4
	Paper chromatography (circular and horizontal paper chromatography).	4

	Introduction to tin-layer chromatography.	4
	TLC on microscope slides.	2
	Partition chromatography for the separation of volatile oils.	2
	Effect of activity of adsorbents on Rf values.	2
Medical Virology and Parasitology	Introduction and classification of the human parasites.	2
	Intestinal protozoa: <i>Entamoeba histolytica</i> .	2
	Commensal amoeba; <i>Entamoeba coli</i> ; <i>Endolimax nana</i> ; <i>Iodamoeba buetschillii</i> .	2
	Flagellate of digestive tract: <i>Giardia lamblia</i> ; <i>Chilomastix mesenili</i> .	2
	Flagellate of genital organs: <i>Trichomonas vaginalis</i> ; Ciliate protozoa; <i>Balantidium coli</i> .	2
	Flagellate of blood and tissues: <i>Leishmania donovani</i> ; <i>Leishmania tropica</i> .	2
	<i>Trypanosoma gambiensis</i> ; <i>Trypanosome rhodesiense</i> ; <i>Trypanosoma cruzi</i> .	2
	Malarial parasite: Life cycle of <i>Plasmodium</i> species; <i>Plasmodium vivax</i> ; <i>Plasmodium falciparum</i> .	2
	<i>Plasmodium malariae</i> ; <i>Plasmodium ovali</i> .	2
	<i>Toxoplasma gondii</i> ; Cestoidea; <i>Taenia saginata</i> ; <i>Taenia solium</i> .	2
	<i>Hymenolepis nana</i> ; <i>Echinococcus granulosus</i> ; <i>Echinococcus multilocularis</i> .	2
	Trematoda: Life cycle of <i>Schistoma</i> species; <i>Schistoma japonicum</i> ; <i>Schistoma mansoni</i> ; <i>Schistoma haematobium</i> .	2
	Nematoda: <i>Trichurs trichuira</i> ; <i>Entrobium vermicularis</i> .	2
<i>Ascaris lumbricoides</i> ; <i>Ancylostoma duodenale</i> .	2	

	Methods of diagnosis of parasites.	2
Physical PharmacyII	Solubility	2
	Solubilization by complexation.	2
	Solubilization by surface active agents	4
	Determination of solubility product constant	2
	determination of partition coefficient	4
	Kinetics	8
	Measurement of surface tension	2
	Viscosity	6

Third stage		
المادة	Lecture title	hours
organic Pharmaceutical Chemistry I	Heterocyclic system: Classes of heterocyclic systems; general structures; properties; Occurrence in nature and in medicinal products.	5
	Five-membered ring heterocyclic compounds: pyrrole; furan and thiophen.	3
	Source of pyrrole, furan and thiophen.	2
	Electrophilic substitution in pyrrole, furan and thiophen: Reactivity and orientation.	5
	Six-membered ring heterocyclic compounds: Structure & reactions of pyridine.	4
	Saturated five-membered heterocyclic compounds.	6
	Heterocyclic of five & six member rings with two & three heteroatoms.	5
Pharmacognosy III	Alkaloids piperine	4
	Black pepper	4
	Tropaine alkaloids	4
	Indole alkaloids	4
	Identification of Harmala alkaloids	2
	Purine bases	4
	Isoquinoline alkaloids	4
	Citric acid	4
Pharmaceutical Technology I	Emulsions: Preparation techniques and quality evaluation.	6
	Suppositories: Preparation techniques and quality evaluation.	6
	Powders: Preparation techniques and quality evaluation.	6
	Capsules: Preparation techniques and quality evaluation.	6
	Semisolid dosage forms: Preparation techniques and quality evaluation.	6
Biochemistry I		
	General urine examination: Physical properties.	2
	General urine examination: Chemical properties; Protein in urine; Sugar in urine.	2

	General urine examination: Ketone bodies in urine (Rothera test); Bile salts in urine (Hays test); Bilirubin in urine.	2
	General urine examination: Evaluation of unknown urine sample.	2
	Cerebrospinal fluid analysis: Measurement of glucose in CSF.	2
	Cerebrospinal fluid analysis: Measurement of chloride in CSF.	2
	Cerebrospinal fluid analysis: Measurement of proteins in CSF.	
	Serum calcium measurement.	2
	Blood phosphorus measurement (inorganic phosphate).	2
	Serum total proteins (quantitative analysis).	2
	Estimation of urea level in the blood.	2
	Measurement of serum uric acid level.	2
	Measurement of serum ascorbic acid level.	
	Gastric juice analysis: Detection of free hydrochloric acid concentration.	2
	Gastric juice analysis: detection of free acid, total acid content.	2
Pathophysiology	General introduction and slide preparation.	2
	Cell injury and degenerations.	2
	Growth disturbances.	2
	Inflammation.	2
	Thrombosis.	2
	Neoplasia.	2

	Disorders of respiratory system.	2
	Disorders of the cardiovascular system	2
	Disorders of renal system.	2
	Liver disorders.	2
	Disorders of the gastrointestinal tract.	2
	Disorders of the central nervous system.	2
	Disorders of the reproductive system.	2
	Disorders of skeletomuscular system.	2
	Disorders of endocrine system.	2
pharmacology I	Pharmacokinetics.	4
	Drug Receptor interaction and Pharmacodynamics.	4
	The autonomic nervous system (ANS).	2
	Cholinergic system.	6
	Adrenergic system.	6
	Principal of antimicrobial therapy.	2
	β - lactam and other cell wall synthesis inhibitor antibiotics	4
	Protien synthesis inhibitors	4
	Quinolones, Folate antagonists, and urinary tract antiseptics.	3
	Antimycobacterium drugs	2
	Antifungal drugs.	2
	Antiprotozoal drugs.	1
	Anthelmintic drugs.	2
Antiviral drugs.	1	
Pharmaceutical Technology II	Solutions (into body cavity, oral and external use).	4
	Syrups: Preparation techniques and quality evaluation.	6
	Elixirs: Preparation techniques and quality evaluation.	4
	Spirits: Preparation techniques and quality evaluation.	6

	Suspensions: Preparation techniques and quality evaluation.	4
	Dispersion of oils in inhalations.	6
Biochemistry II	General urine examination: Physical properties.	2
	General urine examination: Chemical properties; Protein in urine; Sugar in urine.	2
	General urine examination: Ketone bodies in urine (Rothera test); Bile salts in urine (Hays test); Bilirubin in urine.	2
	General urine examination: Evaluation of unknown urine sample.	2
	Cerebrospinal fluid analysis: Measurement of glucose in CSF.	2
	Cerebrospinal fluid analysis: Measurement of chloride in CSF.	2
	Cerebrospinal fluid analysis: Measurement of proteins in CSF.	2
	Serum calcium measurement.	2
	Blood phosphorus measurement (inorganic phosphate).	2
	Serum total proteins (quantitative analysis).	2
	Estimation of urea level in the blood.	2
	Measurement of serum uric acid level.	2
	Measurement of serum ascorbic acid level.	
	Gastric juice analysis: Detection of free hydrochloric acid concentration.	2
	Gastric juice analysis: detection of free acid, total acid content.	2
Pharmacognosy II	Cardio-active glycosides	6

	Anthraquinone glycosides.	6
	Saponin glycosides.	6
	Tannins.	4
	Volatile oils	4
	Flavonoid glycoside	4
inorganic Pharmaceutical Chemistry	Preparation and standardization of 1N HCl (known sample).	2
	Preparation and standardization of 1N HCl (quiz and unknown).	2
	Preparation and standardization of 1N 1NaOH (known sample).	2
	Preparation and standardization of 1N NaOH (quiz and unknown).	2
	Assay of NaOH solution (known sample).	2
	Assay of NaOH solution (unknown sample).	2
	Assay of sodium benzoate (known sample).	2
	Assay of sodium benzoate (quiz and unknown).	2
	Assay of Borax (explanation of basic concepts).	2
	Assay of Borax (quiz and unknown).	2
	Assay of citric acid (known sample).	2
	Assay of citric acid (unknown sample).	2
	Assay of magnesium hydroxide (known sample).	2
	Assay of magnesium hydroxide (quiz and unknown).	2
Assay of ammoniated mercury (unknown sample).	2	

Fourth stage		
المادة	Lecture title	hours
Pharmacology II	Routs of drug administration	4
	Onset and duration of drugs (Barbiturates)	2
	Absorption and excretion of drugs	2
	Effect of parasymphomimetics on gland secretions	2
	Drugs and human eye.	4
	The effects of drugs on IOP rabbits	2
	Evaluation of opioid analgesics	2
	Evaluation of NSAIDS	4
	Evaluation of anti-parkinsonian drugs	2
	Evaluation of anti- convulsant drugs	2
	The effects of drugs and their antagonists on isolated rats ileum	2
	The effects of drugs and their antagonists on isolated rabbits ileum	2
	organic pharmaceutical chemistry	Preparation of salicylic acid.
Re-crystallization of salicylic acid.		2
Synthesis of aspirin.		2
Re-crystallization of aspirin.		2
Assay of aspirin (known sample).		2
Assay of aspirin (unknown sample).		2
Preparation of nitrobenzene.		2
Preparation of aniline.		2
Preparation of acetanilide.		2
Re-crystallization of acetanilide.		2
Chlorosulfonation of acetanilide.		2
Amination of <i>p</i> -chlorobenzene sulfonyl chloride.		2

	Hydrolysis of <i>p</i> -chlorobenzene sulfonyl chloride to sulfanilamide.	2
	Assay of sulfa drugs (known sample).	2
	Assay of sulfa drugs (unknown sample).	2
Clinical Pharmacy1	Communication with patients.	2
	Respiratory system in practice (part I): Cough.	2
	Respiratory system in practice (part II): Common cold.	2
	G.I.T system in practice (part I): Constipation.	2
	G.I.T system in practice (part II): Diarrhea and IBS.	2
	GIT system in practice (part III): GERD& indigestion.	2
	Skin conditions in practice (part I): Hair loss; cold sore and athlete's foot.	2
	Skin conditions in practice (part II): Dandruff, Eczema and mouth ulcer.	2
	Skin conditions in practice (part III): warts and scabies.	2
	Pediatrics in practice: Oral thrush; colic; pinworm and napkin rash.	2
	Minor eye disorders in practice.	2
	CNS system: Insomnia, motion sickness, obesity and nicotine replacement therapy (NRT).	2
	Drug Information sources for pharmacist.	2
	An update in reclassification of OTC drugs.	2
	Collective practice.	2
Biopharmaceutics	Communication with physician and patient counseling.	2
	Drugs for anemia and related disorders.	2
	Cardiovascular drugs in practice part I.	2
	Cardiovascular drugs in practice part II.	2
	Cardiovascular drug in practice part III.	2

	Drugs for asthma and COPD in practice.	2
	Antimicrobial drugs in practice part I.	2
	Antimicrobial drugs in practice part II.	2
	Antimicrobial drugs in practice part III.	2
	Collective practice number I.	2
	Drugs acting on CNS part I.	2
	Drugs for musculoskeletal and joints diseases.	2
	Drugs for endocrine system part I (Diabetes Mellitus).	2
	Drugs for endocrine system part II (other endocrine drugs).	2
	Collective practice number I.	2
Organic Pharmaceutical Chemistry III	Cannizaro reaction (part I).	2
	Cannizaro reaction (part II).	2
	Re-crystallization of benzoic acid.	2
	Assay of ascorbic acid (known sample).	2
	Assay of ascorbic acid (unknown sample).	2
	Synthesis of Phenol.	4
	Assay of phenol (known sample).	2
	Assay of phenol (unknown sample).	2
	Synthesis of chlorbutanol.	4
	Synthesis of paracetamol.	4
Clinical Pharmacy II	Communication with patients.	2

	Respiratory system in practice (part I): Cough.	2
	Respiratory system in practice (part II): Common cold.	2
	G.I.T system in practice (part I): Constipation.	2
	G.I.T system in practice (part II): Diarrhea and IBS.	2
	GIT system in practice (part III): GERD& indigestion.	2
	Skin conditions in practice (part I): Hair loss; cold sore and athlete's foot.	2
	Skin conditions in practice (part II): Dandruff, Eczema and mouth ulcer.	2
	Skin conditions in practice (part III): warts and scabies.	2
	Pediatrics in practice: Oral thrush; colic; pinworm and napkin rash.	2
	Minor eye disorders in practice.	2
	CNS system: Insomnia, motion sickness, obesity and nicotine replacement therapy (NRT).	2
	Drug Information sources for pharmacist.	2
	An update in reclassification of OTC drugs.	2
	Collective practice.	2
General Toxicology	General introduction to practical toxicology.	2
	Acute toxicity study, determination of LD50.	4
	Drug toxicity on liver.	4
	Nicotine toxicity.	4
	Pesticide toxicity.	4
	Metal toxicity	4
	Blood toxicity.	4
	Drug-induced toxicity.	4
Industrial Pharmacy I	Introduction in industrial pharmacy and pre-formulation.	2
	Effervescent granules: Preparation and characterization.	4
	Flow properties and rheology of granules.	4

Tablet dosage form: Preparation and characterization.	4
Evaluation of tablets.	4
Preparation of children aspirin by wet granulation method.	4
Sustained release dosage forms: Preparation and characterization.	4
Coating techniques of tablets.	4

Fifth stage		
المادة	Lecture title	hours
Industrial Pharmacy II		
	Direct compression method for preparation of tablets.	6
	Wet granulation method for preparation of tablets.	6
	Dry granulation method for preparation of tablets.	6
	Evaluation of tablets.	4
	Capsules dosage form: Preparation and evaluation.	4
	Parenteral dosage forms.	4
Therapeutic Drug Monitoring	Problems in basic Pharmacokinetics (PK)	2
	Problems in basic pharmacodynamic (PD)	2
	Clinical PK equations and calculations	2
	Clinical PK in special population and cases	2
	Problems in Clinical PK for Antibiotics (e.g., Aminoglycosides, Vancomycin)	4
	Problems in Clinical PK/PD for Cardiovascular agents (e.g., Digoxin, Lidocaine, Procainamide/N-Acetyl Procainamide)	4
	Problems in Clinical PK/PD for Anticonvulsants (e.g., Phenytoin, Carbamazepine, Valproic Acid, Phenobarbitone/Primidone, Ethosuxsimide)	6
	Problems in Clinical PK/PD for Immunosuppressants (e.g., Cyclosporine, Tacrolimus)	2
	Clinical PK/PD of other drugs (e.g., Lithium, Theophylline, Anticancer agents, Anticoagulants)	6
Clinical Chemistry		
	Specimen collection and preservation.	2
	Estimation of blood glucose (enzymatic method).	2

	Oral Glucose Tolerance Test (OGTT).	2
	Determination of blood urea nitrogen.	2
	Determination of Creatine and Creatinine.	2
	Estimation of serum uric acid.	2
	Estimation of serum Bilirubin.	2
	Estimation of serum Phosphate.	2
	Total lipid profile: Estimation of serum cholesterol.	2
	Total lipid profile: Estimation of LDL.	2
	Total lipid profile: Estimation of HDL.	2
	Total lipid profile: Estimation of Triglycerides.	2
	Estimation of AST activity.	2
	Estimation of ALT activity.	2
	Estimation of CK activity.	2
Clinical Toxicology	Laboratory Principles or Toxicological Screening.	2
	Over the counter drugs: Case on Acetaminophen poisoning; Salicylates; evaluation of urine salicylates.	4
	Urine analysis of toxins and chemicals.	4
	Cardiac glycosides toxicity: Digitalis.	2
	Cases on toxicity with foods and dietary supplements.	4

Hospital Training	Identification of some common poisons in biological samples: Arsenic; cyanide; strychnine; Salicylates; Phenothiazine derivatives; barbiturates	6
	Evaluation of cases of toxicity with anti-parkinsonian drugs.	4
	Evaluation of drug toxicity on human.	4
	Internal medicine department	20
	Department of surgery	20
	Department of gynaecology part1 obstetric	20
Clinical Laboratory Training	Diagnostic test basics, collecting & transporting specimens, venipuncture, urine specimen, stool specimen.	4
	Biochemical tests: Fasting blood glucose, Post-prandial glucose, Oral glucose tolerance test.	4
	Blood urea, Blood creatinine, Creatinine clearance, Uric acid.	4
	Cholesterol, Lipoproteins, triglycerides.	4
	Blood proteins, Bilirubin.	4
	Calcium, Inorganic phosphate, Serum chloride	4
	Alkaline phosphatase, Acid phosphatase, Alanine amiotransferase, Aspartate aminotransferase, Lactate dehydrogenase, Creatine phosphokinase.	4
	Serological tests: VDRL, ASO- Titer, Hepatitis tests.	4
	C-reactive protein test, Rheumatic factor test, Rosebengal test, Typhoid fever test(Widal test), Pregnancy Test.	4
	General urine examination, urine specimen collection.	4
	Hematological tests: RBC count, Hb, PCV, RBC indices, WBC count, Platelets count.	4

	Blood typing, Coombs test, Bleeding time, ESR.	4
	Microbiological tests: culture and sensitivity tests, Staining methods	4
	Culture media, Enriched culture media for general use	4
	Tests for identification of bacteria, Disk diffusion tests of sensitivity to antibiotics, Choice of drugs for disk test, bacterial disease and their laboratory diagnosis.	4