hcpc health & care professions council

Course information form

Note to applicant: This form needs to be completed, certified and uploaded as part of your online application. Please make sure you upload this form to the online portal as one document.

The below named applicant has applied to register with the Health and Care Professions Council (HCPC), which would enable them to practise within the UK. We need to obtain details of each applicant's professional training. Please provide details on the content of each part of the programme that the applicant undertook at your institution.

We require content of academic and clinical training, including approximate numbers of hours within each part of the course and the assessment methods used. Any scores obtained under examination may also be useful. A list of procedures undertaken and departments attended during the course is valuable in the assessment process.

Please indicate the range and scope of clinical placements undertaken. It is likely that this will take up several pages. A syllabus is unlikely to provide sufficient applicant specific detail for registration purposes, but a copy may be provided in addition to the Course Information form. If part of the applicant's training took place at another institution, please indicate N in the "Undertaken at this institution" box. A Curriculum Certifying Document may be submitted if the detail below is included.

This form must bear the stamp or seal of the university or training institution and include contact details for the course administrator or another appropriate member of staff who may be contacted as part of the verification process.

Name of applicant:	SAYFI ABDULLA
Name of institution:	KIDWAI MEMORIAL INSTITUTE OF ONCOLOGY
Institution address:	DR.M.H. MARIGOWDA ROAD, BANGALORE, KARNATAKA-560029
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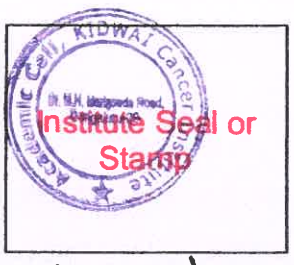
Title of professional course:	BACHELOR OF SCIENCE ANESTHESIA TECHNOLOGY
Date course commenced:	AUG 2010
Date course completed:	APRIL 2014



I certify that this is a true copy of the original document Seen by me Anjana Wilson Hcpc No: ODP041595 Date - 25/8/23

Please input your response into the table below. The fields will grow to accommodate your answer

Course Year 1,2,3,4,	Subject, descriptive title of subject, session, theme or module name.	Content and examination method, hours studied. This may be taken from the syllabus, but must only include the components of the course undertaken by the named applicant. Optional courses not undertaken by the applicant should not be included.	**Assessment Method.** Verbal = V Written = W Practical = P	Undertaken at this institution Y/N
FIRST YEAR	**ANATOMY**	**Introduction: human body as a whole** **Theory:** Definition of anatomy and its divisions Terms of location, positions and planes Cell and its organelles Epithelium-definition, classification, describe with examples, function Glands- classification, describe serous & mucous glands with examples Basic tissues - classification with examples Practical: Histology of types of epithelium Histology of serous, mucous & mixed salivary gland **2. Locomotion and support** **Theory:** Cartilage - types with example & histology Bone - Classification, names of bone cells, parts of long bone, microscopy of compact bone, names of all bones, vertebral column, intervertebral disc, fontanelles of fetal skull Joints - Classification of joints with examples, synovial joint (in detail for radiology) Muscular system: Classification of muscular tissue & histology Names of muscles of the body Practical: Histology of the 3 types of cartilage Demo of all bones showing parts, radiographs of normal bones & joints Histology of compact bone (TS & LS) Demonstration of all muscles of the body Histology of skeletal (TS & LS), smooth & cardiac muscle **3. Cardiovascular system** **Theory:** Heart-size, location, chambers, exterior & interior Blood supply of heart Systemic & pulmonary circulation Branches of aorta, common carotid artery, subclavian artery, axillary artery, brachial artery, superficial palmar arch, femoral artery, internal iliac arteryPeripheral pulse Inferior venacava, portal vein, portosystemic anastomosis Great saphenous vein Dural venous sinuses Lymphatic system- cisterna chyli & thoracic duct Histology of lymphatic tissues Names of regional lymphatics, axillary and inguinal lymph nodes in brief Practical: Demonstration of heart and vessels in the body		Y

		Histology of large artery, medium sized artery & vein, large vein Microscopic appearance of large artery, medium sized artery & vein, large vein pericardium Histology of lymph node, spleen, tonsil & thymus Normal chest radiograph showing heart shadows Normal angiograms **4. Gastro-intestinal system** **Theory:** Parts of GIT, Oral cavity (lip, tongue (with histology), tonsil, dentition, pharynx, salivary glands, Waldeyer's ring) Oesophagus, stomach, small and large intestine, liver, gall bladder, pancreas Radiographs of abdomen **5. Respiratory system** Parts of RS, nose, nasal cavity, larynx, trachea, lungs, bronchopulmonary segments Histology of trachea, lung and pleura Names of paranasal air sinuses Practical:Demonstration of parts of respiratory system. Normal radiographs of chest Histology of lung and trachea **6. Peritoneum** Theory: Description in brief Practical: Demonstration of reflections **7. Urinary system** Kidney, ureter, urinary bladder, male and female urethra Histology of kidney, ureter and urinary bladder Practical:demonstration of parts of urinary system Histology of kidney, ureter, urinary bladder Radiographs of abdomen-IVP, retrograde cystogram **8. Reproductive system** **Theory:** Parts of male reproductive system, testis, vas deferens, epididymis, prostate (gross & histology) Parts of female reproductive system, uterus, fallopian tubes, ovary (gross & histology) Mammary glad - gross Practical: demonstration of section of male and female pelves with organs in situ Histology of testis, vas deferens, epididymis, prostate, uterus, fallopian tubes, ovary Radiographs of pelvis - hysterosalpingogram **9. Endocrine glands** **Theory:** Names of all endocrine glands in detail on pituitary gland, thyroid gland, parathyroid gland, suprarenal glad - (gross & histology) Practical: Demonstration of the glands Histology of pituitary, thyroid, parathyroid, suprarenal glands **10. Nervous system** **Theory:**		

		Neuron Classification of NS Cerebrum, cerebellum, midbrain, pons, medulla oblongata, spinal cord with spinal nerve (gross & histology) Meninges, Ventricles & cerebrospinal fluid Names of basal nuclei Blood supply of brain Cranial nerves Sympathetic trunk & names of parasympathetic ganglia Practical: Histology of peripheral nerve & optic nerve Demonstration of all plexuses and nerves in the body Demonstration of all part of brain Histology of cerebrum, cerebellum, spinal cord **Sensory organs:** **Theory:** Skin: Skin-histology Appendages of skin Eye: Parts of eye & lacrimal apparatus Extra-ocular muscles & nerve supply Ear:parts of ear- external, middle and inner ear and contents Practical: Histology of thin and thick skin Demonstration and histology of eyeball Histology of cornea & retina **Embryology:** **Theory:** Spermatogenesis & oogenesis Ovulation, fertilization Fetal circulation Placenta Internal Assessment Theory - Average of two exams conducted. Practicals: Record & Lab work.		
	PHYSIOLOGY	Introduction - composition and function of blood Red blood cells - Erythropoiesis, stages of differentiation function, count physiological Variation. Haemoglobin -structure, functions, concentration physiological variation Methods of Estimation of Hb White blood cells - Production , function, life span, count, differential count Platelets - Origin, normal count, morphology functions. Plasma Proteins - Production, concentration, types, albumin, globulin, Fibrinogen, Prothrombin functions. Haemostasis & Blood coagulation Haemostasis - Definition, normal haemostasis, clotting factors, mechanism of clotting, disorders of clotting factors. Blood Bank Blood groups - ABO system, Rh system Blood grouping & typing Cross matching Rh system - Rh factor, Rh in compatibility.		Y

		Blood transfusion - Indication, universal donor and recipient concept. Selection criteria of a blood donor. transfusion reactions Anticoagulants - Classification, examplesand uses Anaemias : Classification - morphological and etilogical. effects of anemia on body Blood indices - Colour index, MCH, MCV, MCHC Erythrocyte sedementation Rate (ESR) and Paced cell volume Normal values, Definition, determination, Blood Volume - Normal Value, determination of blood volume and regulation of blood volume Body fluid - pH, normal value, regulation and variation Lymph - lymphoid tissue formation, circulation, composition and function of lymph **Cardiovascular system** Heart - Physiological Anatomy, Nerve supply Properties of cardiac muscle, Cardiac cycle - systole, diastole. Intraventricular pressure curves. Cardiac Output - only definition Heart sounds Normal heart sounds Areas of auscultation. Blood Pressure - Definition, normal value, clinical measurement of blood pressure. Physiological variations, regulation of heart rate, cardiac shock, hypotension, hypertension. Pulse - Jugalar, radial pulse, Triple response Heart sounds - Normal heart sounds, cause characteristics and signification. Heart rate Electrocardiogram (ECG) -significance. **Digestive System** - Physiological anatomy of Gastro intestinal tract, Functions of digestive system Salivary glands Stucture and functions. Deglutination -stages and regulation Stomach - structure and fuctions Gastric secretion - Composition function regulation of gastric juice secretion Pancrease - structure, function, composition, regulation of pancreatic juice Liver - functions of liver Bile secretion, composition, function regulation of bile secretion .Bilirubin metabolism types of bilirubin, Vandernberg reaction, Jaundice- types, significance. Gall bladder - functions Intestine - small intestine and large intestine Small intestine -Functions- Digestive, absorption, movements. Large intestine - Functions, Digestion and absorption of Carbohydrates,Proteins, Fats, Lipids. Defecation **Respiratory system** Functions of Respiratory system, Physiological Anatomy of Respiratory system, Respiratory tract, Respiratory Muscles, Respiratory organ-lungs, Alveoli, Respiratory membrane, stages of		

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		respiration. Mechanism of normal and rigorous respiration. Forces opposing and favouring expansion of the lungs. Intra pulmonary pleural pressure, surface tension, recoil tendency of the wall. H Transportation of Respiratory gases: Transportation of Oxygen: Direction, pressure gradient, Forms of transportation, Oxygenation of Hb. Quantity of Oxygen transported. **Lung volumes and capacities** Regulation of respiration what? Why? How? Mechanisms of Regulation, nervous and chemical regulation. Respiratory centre. Hearing Brier, Reflexes. **Applied Physiology and Respiration:** Hypoxia, Cyanosis, Asphyxia, Dyspnea, Dysbarism, Artificial Respiration, Apnoea. **Endocrine System** - Definition Classification of Endocrine glands & their Harmones Properties of Harmones . **Thyroid gland hormone** - Physiological, Anatomy, Hormone scerated, Physiological function, regulation of secretion. Disorders - hypo and hyper secretion of hormone. **Adrenal gland** - Adrenal cortex physiologic anatomy of adrenal gland, Adrenal cortex, cortical hormones - functions and regulation Adrenal medulla - Hormones , regulation and secretion. Functions of Adrenaline and nor adrenaline **Pituitary hormones** - Anterior and posterior pituitary hormones, secretion, function Pancreas - Hormones of pancreas Insulin - secretion, regulation ,function and action. Diabetes mellitus - Regulation of blood glucose level. **Parathyroid gland** - function, action, regulation of secretion of parathyroid hormone. Calcitonin - function and action **Special senses** Vision - structure of eye. Function of different parts. Structure of retina Hearing structure and function of can mechanism of hearing Taste - Taste buds functions . Smell physiology, Receptors. **Nervous system:** Functions of Nervous system, Neurone structure, classification and properties. Neuroglia, nerve fiber, classification ,conduction of impulses continuous and saltatory. Velocity of impulse transmission and factors affecting. Synapse - structure, types, properties. Receptors - Definition, classification ,properties. Reflex action - unconditioned properties of reflex action. Babinski's sign. Spinal cord nerve tracts. Ascending tracts, Descending tracts - Pyramidal tracts - Extrapyramidal tracts. Functions of Medulla, pons, Hypothalamic disorders. Cerebral cortex		

		lobes and functions, Sensory cortex, Motor cortex,Cerebellum functions of Cerebellum.Basal ganglion-functions. EEG. **Cerebro Spinal Fluid(CSF) :** formation, circulation, properties, composition and functions lumbar puncture. **Autonomic Nervous System:** Sympathetic and parasympathetic distribution and functions and comparison of functions. **Excretory System** **Excretory organs** **Kidneys:** Functions of kidneys structural and functional unit nepron, vasarecta, cortical and juxtamedullary nephrons - Comparision, Juxta Glomerular Apparatus -Structure and function. Renal circulation peculiarities. **Mechanism of Urine formation:** Ultrafiltration criteria for filtration GFR, Plasma fraction, EFP, factors effecting EFR. Determination of GFR selective reabsorption - sites of reabsorption substance reabsorbed, mechanisms of reabsorption Glucose, urea. H + Cl aminoacids etc. TMG, Tubular lead, Renal threshold % of reabsorption of different substances, selective e secretion. Properties and composition of normal urine, urine output. Abnormal constituents in urine , Mechanism of urine concentration. Counter - Current Mechanisms : Micturition, Innervation of Bladder, Cysteurethrogram. **Diuretics:** Water, Diuretics, osmotic diuretics, artificial kidney Renal function tests - plasma clearance Actions of ADH, Aldosterone and PTH on kidneys. Renal function tests **Reproductive system:** Function of Reproductive system, Puberty, male reproductive system. Functions of testes, spermatogenesis site, stages, factors influencing semen. Endocrine functions of testes. **Androgens:** Testosterone structure and functions. Female reproducive syustem. Ovulation, menstrual cycle. Physiological changes during pregnancy, pregnancy test. **Lactation:** Composition of milk factors controlling lactation. Muscle nerve physiology: Classification of muscle, structure of skeletal muscle, Sarcomere contractile proteins, Neuromuscular junction. Transmission across, Neuromuscular junction. Excitation contraction coupling. Mechanism of muscle contraction muscle tone, fatigue Rigour mortis. **Skin -structure and function** Body temperature measurement, Physiological variation, Regulation of body Temperature by		

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		physical chemical and nervous mechanisms .Role of Hypothalamus, Hypothermia and fever. Practicals Haemoglobinometry White Blood Cell count Red Blood Cell count Determination of Blood Groups Leishman's staining and Differential WBC count Determination of packed cell Volume Erythrocyte sedimentation rate [ESR] Calculation of Blood indices Determination of Clotting Time, Bleeding Time Blood pressure Recording Auscultation for Heart Sounds Artificial Respiration Determination of vital capacity		
	BIO CHEMISTRY	**Theory:** **Specimen collection:** Pre-analytical variables Collection of blood Collection of CSF & other fluids Urine collection Use of preservatives Anticoagulants **1. Introduction to Laboratory apparatus** Pipettes- different types (Graduated, volumetric, Pasteur, Automatic etc.,) Calibration of glass pipettes Burettes, Beakers, Petri dishes, depression plates. Flasks - different types)Volumetric, round bottmed, Erlemeyer conical etc.,) Funnels - different types (Conical, Buchner etx.,) Bottles - Reagent bottles - graduated and common, Wash bottles - different type Specimen bottles etc., **2. Measuring cylinders, Porcelain dish** Tubes - Test tubes, centrifuge tubes, test tube draining rack Tripod stand, Wire gauze, Bunsen burner. Cuvettes, significance of cuvettes in colorimeter, cuvettes for visible and UV range, cuvette holders Racks - Bottle, Test tube, Pipette Dessicator, Stop watch, rimers, scissors. Dispensers - reagent and sample Any other apparatus which is important and may have been missed should also be covered **Maintenance of lab glass ware and apparatus:** Glass and plastic ware in Laboratory * use of glass: significance of boro silicate glass ; care and cleaning of glass ware, different cleaning solutions of glass * care and cleaning of plastic ware, different cleaning solutions **3. Instruments:** (Theory and demonstration) Diagrams to be drawn Water bath: Use, care and maintenance Oven & Incubators: Use, care and maintenance.		Y

		Water Distilation plant and water deionisers. Use, care and maintenance Refrigerators, cold box, deep freezers - Use, care and maintenance Reflux condenser: Use, care and maintenance Centrifuges (Theory and demonstration) Diagrams to be drawn Definition, Principle, svedberg unit, centrifugal force, centrifugal field rpm, ref. Conversion of G to rpm and vice versa. Different types of centrifuges Use care and maintenance of a centrifuge Laboratory balances [Theory & Practicals) Diagrams to be drawn Manual balances: Single pan, double pan, trip balance Direct read out electrical balances. Use care and maintenance. Guidelines to be followed and precautions to be taken while weighing Weighing different types of chemicals, liquids. Hygroscopic compounds etc. Colorimeter and spectrophotometer (Theory and Practicals) Diagrams to be drawn Principle, Parts Diagram. Use, care and maintenance. pH meter (Theory & practicals) Diagrams to be drawn principle, parts, Types of electrods, salt bridge solution. Use, care and maintenance of Ph meter and electrodes Guidelines to be followed and precautions to be taken while using pH meter **4. Safety of measurements** **5. Conventional and SI units** **6. Atomic structure** Dalton's theory, Properties f electrons, protons, neutrons, and nucleus, Rutherford's model of atomic structure, Bohr's model of atomic structure, orbit and orbital, Quantum numbers, Heisenberg's uncertainly principle. Electronic configuration - Aufbau principle, Pauli's exclusion principle, etc.,m Valency and bonds - different types of strong and weak bonds in detail with examples. Theory & Practicals for all the following under this section Molecular weight, equivalent weight of elements and compounds, normality molarity. Preparation of molar solutions (mole/litre solution) eg: 1 M Nacl, 0.15 M NaCL, 1 M NaOH, 0.1 M HCl, 0.1 M H 2S04 etc., Preparation of normal solutions. eg., IN Na2CO3, O IN Oxalic acid, 0.1 N HCl, 0.1N H2S04, 0.66 N H2S04 etc., Percent solutions. Preparation of different solutions - v/v w/v (solids, liquids and acids) Conversion of a percent solution into a molar solution **Dilutions** Diluting solutions: eg. Preparation of 0.1 N NaCl from 1 N NaCl from 2 NHCl etc., Preparing working		

		standard from stock standard, Body fluid dilutions, Reagent dilution techniques, calculating the dilution of a solution, body fluid reagent etc., Saturated and supersaturated solutions. Standard solutions. Technique for preparation of standard solutions. Eg., Glucose, urea, etc., Significance of volumetric flask in preparaing standard solutions. Volumetric flasks of different sizes, Preparation of standard solutions of deliquesent compounds (CaCl2, potassium carbonate, sodium hydroxide etc.,)Preparation of standards using conventional and Sl units Acids, bases, salts and indicators. **Acids and Bases:** Definition, physical and chemical properties with examples. Arrehenius concept of acids and bases, Lowery - Bronsted theory of acids and bases classification of acids and bases. Different between bases and alkali, acidity and basicity, monoprotonic and polyprotonic acids and bases Concepts of acid base reaction, hydrogen ion concentration, Ionisation of water, buffer, Ph value of a solution, preparation of buffer solutions using Ph meter. Salts: Definition, classification, water of crystallization - definition and different types, deliquescent and hygroscopic salts **Acid- base indicators:** (Theory and Practical) **Theory -** Definition, concept, mechanism of dissociation of an indicator, colour change of an indicator in acidic and basic conditions, use if standard buffer solution and indicators for Ph determinations, preparation and its application, list of commonly used indicators and their Ph range, suitable pH indicators used in different titrations, universal indicators. Practical - Titration of a simple acid and a base (Preparation of standard solution of oxalic acid and using this solution finding out the normality of a sodium hydroxide solution . Acid to be titrated using this base) Calculation of normality of an acid or a base after titration, measurement of hydrogen ion concentration. Quality control: Accuracy Precision Specificity Sensitivity Limits of error allowable in laboratory Percentage error Normal values and Interpretations Special Investigations: Serum Electrophoresis Immunoglobulins Drugs: Digitoxin, Theophyllines Regulation of Acid Base status: Henderson Hasselback Equations		

		Buffers of the fluid pH Regulation Disturbance in acid Base Balance Anion Gap Metabolic acidosis Metabolic acidosis Metabolic alkalosis Respiratory acidosis Respiratory alkalosis Basic Principles and estimation of Blood Gases and pH Basic principles and estimation of Electrolytes Water Balance Sodium regulation Bicarbonate buffers Nutrition, Nutritional support with special emphasis on parental nutrition. Calorific Value Nitrogen Balance Respiratory Quotient Basal metabolic rate Dietary Fibers Nutritional importance of lipids, carbohydrates and proteins Vitamins **PRACTICALS** Analysis of Normal Urine Composition of urine Procedure for routine screening Urinary screening for inborn errors of metabolism Common renal disease Urinary calculus Urine examination for detection of abnormal constituents Interpretation and Diagnosis through charts Liver Function tests Lipid Profile Renal Function test Cardiac markers Blood gas and Electrolytes 4. Estimation of Blood sugar, Blood Urea and electrolytes 5. Demonstration of Strips Demonstration of Glucometer		
	PATHOLOGY	**HistoPathology - Theory** - Introduction to Histo Pathology - Receiving of Specimen in the laboratory - Grossing Techniques - Mounting Techniques - various Mountants - Maintenance of records and filing of the slides. - Use & care of Microscope - Various Fixatives, Mode of action, Preparation and Indication. - Bio-Medical waste management - Section Cutting - Tissue processing for routine paraffin sections - Decalcification of Tissues.		

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		- Staining of tissues - H& E Staining - Bio-Medical waste management Clinical Pathology - Theory - Introduction to Clinical Pathology - Collection, Transport, Preservation, and Processing of various clinical specimens - Urine Examination - Collection and Preservation of urine. Physical, chemical, Microscopic Examination - Examination of body fluids. - Examination of cerebro spinal fluid (CSF) - Sputum Examination. - Examination of feces **Haematology - Theory** - Introduction to Haematology - Normal constituents of Blood, their structure and function. - Collection of Blood samples - Various Anticoagulants used in Haematology - Various instruments and glassware used in Haematology, Preparation and use of glassware - Laboratory safety guidelines - SI units and conventional units in Hospital Laboratory - Hb,PCV - ESR - Normal Haemostasis Bleeding Time, Clotting Time, Prothrombin Time, Activated Partial Thromboplastin Time. **Blood Bank** Introduction Blood grouping and Rh Types Cross matching **PRACTICALS** - Urine Examination. - Physical - Chemical - Microscopic - Blood Grouping Rh typing. - Hb Estimation,Packed Cell Volume[PCV], Erythrocyte Sedimentation rate[ESR] - Bleeding Time, Clotting Time. - Histopathlogy - Section cutting and H &E Staining.[For BSc MLT only		
	MICRO BIOLOGY	1. Morphology 4 hours Classification of micro organisms, size, shape and structure of bacteria. Use of microscope in the study of bacteria. 2. Growth and nutrition 4 hours Nutrition, growth and multiplications of bacteria, use of culture media in diagnostic Bacteriology 3. Sterilisation and Disinfection 4 hours		Y

		Principles and use of equipments of sterlization namely Hot Air oven, Autoclave and serum Inspissrator. Pasteurization, Anti septic and disinfectants. Antimicrobial sensitivity test. 4. Immunology 6 hours Immunity Vaccines, Types of Vaccine and immunization schedule Principles and interpretation of commonly done serological tests namely Widal, VDRL, ASLO, CRP, RF & ELISA. Rapid tests for HIV and HbsAg (Technical details to avoid) 5. Systematic Bacteriology 20 hours Morphology, cultivation, diseases caused, laboratory diagnosis including specimen collection of the following bacteria(the classification, antigenic structure and pathogenicity are not to be taught) Staphyloccci, Streptococci, Pneumococci, Gonococci, Menigococci, C diphtheriae, Mycobacteria, Clostridia, Bacillus, Shigella, Salmonella, Esch coli, Klebsiella, Proteus,vibrio cholerae, Pseudomonas & Spirochetes 6. Parasitology 10 hours Morphology, life cycle, laboratory diagnosis of following parasites E. histolytica, Plasmodium, Tape worms, Intestinal nematodes 7. Mycology 4 hours Morphology, diseases caused and lab diagnosis of following fungi. Candida, Cryptococcus, Dermatophytes ,opportunistic fungi. 8. Virology 10 hours General properties of viruses, diseases caused, lab diagnosis and prevention of following viruses, Herpes, Hepatitis, HIV, Rabies and Poliomyelitis. 9. Hospital infection Causative agents, transmission methods, investigation, prevention and control Hospital infection. 4 hours 10. Principles and practice Biomedical waste management 4 hours **Practical 20 hours** Compound Microscope. Demonstration and sterlization of equipments - Hot Air oven, Autoclave, Bacterial filters. Demonstration of commonly used culture media, Nutrient broth, Nutrient agar, Blood agar, Chacolate agar, Mac conkey medium, LJ media, Robertson Cooked meat media, Potassium tellurite media with growth, Mac with LF & NLF, NA with staph Antibiotic susceptibility test Demonstration of common serological tests - Widal, VRDL, ELISA. Grams stain Acid Fast staining		

		Stool exam for Helminthic ova Visit to hospital for demonstration of Biomedical waste mangement. Anaerobic culture methods.		
	ENGLISH	**BEHAVIOURAL OBJECTIVES:** The student at the end of training is able to 1. Read and comprehend english language 2. Speak and write grammatically correct english 3. Appreciates the value of English literature in personal and professional life. **UNIT - I : INTRODUCTION :** Study Techniques Organisation of effective note taking and logical processes of analysis and synthesisUse of the dictionary Enlargement of vocabulary Effective diction **UNIT - II: APPLIED GRAMMAR:** Correct usage The structure of sentences The structure of paragraphs Enlargements of Vocabulary **UNIT - III:WRITTEN COMPOSITION:** Precise writing and summarising Writing of bibliography Enlargement of Vocabulary **UNIT - IV: READING AND COMPREHENSION:** Review of selected materials and express oneself in one's words. Enlargement of Vocabulary. **UNIT - V: THE STUDY OF THE VARIOUS FORMS OF COMPOSITION:** Paragraph, Essay, Letter, Summary, Practice in writing **UNIT - VI: VERBAL COMMUNICATION:** Discussions and summarization, Debates, Oral reports, use in teaching		Y
	HEALTH CARE	**Introduction to Health** Definition of Health, Determinants of Health, Health Indicators of India, Health Team Concept. National Health Policy National Health Programmes (Briefly Objectives and scope) Population of India and Family welfare programme in India **Introduction to Nursing** What is Nursing ? Nursing principles. Inter-Personnel relationships. Bandaging : Basic turns; Bandaging extremities; Triangular Bandages and their application. Nursing Position, Bed making, prone, lateral, dorsal, dorsal re-cumbent, Fowler's positions, comfort measures, Aids and rest and sleep. Lifting And Transporting Patients: Lifting patients up in the bed. Transferring from bed to wheel chair. Transferring from bed to stretcher.		Y

		Bed Side Management: Giving and taking Bed pan, Urinal: Observation of stools, urine. Observation of sputum, Understand use and care of catheters, enema giving. Methods Of Giving Nourishment: Feeding, Tube feeding, drips, transfusion, Care Of Rubber Goods Recording of body temperature, respiration and pulse, Simple aseptic technique, sterlization and disinfection. Surgical Dressing: Observation of dressing procedures **First Aid :** Syllabus as for Certificate Course of Red Cross Society of St. John's Ambulance Brigade.		
	APPLIED PHARMA COLOGY	General concepts about pharmacodynamic and Pharmacokinetic Principles involved in drug activity. **I. Autonomic nerves system.** • Anatomy & functional organisation. • List of drugs acting an ANS including dose, route of administration, indications, contra indications and adverse effects. **II. Cardiovascular drugs- Enumerate the mode of action, side effects And therapeutic uses of the following drugs.** a. Antihypertensives • Beta Adrenergic antagonists • Alpha Adrenergic antagonists • Peripheral Vasodilators • Calcium channel blockers b. Antiarrhythmic drugs c. Cardiac glycosides d. Sympathetic and nonsympathetic inotropic agents. e. Coronary vasodilators. f. Antianginal and anti failure agents g. Lipid lowering & anti atherosclerotic drugs. h. Drugs used in Haemostais - anticoagulants Thrombolytics and antithrombolytics. i. Cardioplegic drugs- History, Principles and types of cardioplagia. j. Primary solutions - History, principles & types. k. Drugs used in the treatment of shock. **III. Anaesthetic agents.** • Definition of general and local anaesthetics. • Classification of general anaesthetics. • Pharmacokinetics and Pharmacodynamics of inhaled anaesthetic agents. • Intravenous general anaesthetic agents. • Local anaesthetics - classification mechanism of action, duration of action and methods to prolong the duration of action. Preparation, dose and routes of administration. **IV. Analgessics** • Definition and classification • Routes of administration, dose, frequency of administration,		Y

		Side effects and management of non opioid and opiod analgesics **V. Antihistamines and antiemetics-** • Classification, Mechanism of action, adverse effects, Preparations, dose & routes & administration. **VI. CNS stimulants and depressants** • Alcohol • Sedatives, hypnotics and narcotics • CNS stimulants • Neuromuscular blocking agents and muscle relaxants. **VII.Pharmacological protection of organs during CPB** **VIII.Inhalational gases and emergency drugs.** **IX. Pharmacotherapy of respiratory disorders** • Introduction - Modulators of bronchial smooth muscle tone and pulmonary vascular smooth muscle tone • Pharmacotherapy of bronchial asthma • Pharmacotherapy of cough • Mucokinetic and mucolytic agents • Use of bland aerosols in respiratory care. **X. Corticosteroids** - Classification, mechanism of action, adverse effects and complications. Preparation, dose and routes of administration. **XI. Diuretics** • Renal physiology • Side of action of diuretics • Adverse effects • Preparations, dose and routes of administrion. **XII.Chemotherapy of infections** • Definition • Classification and mechanism of action of antimicrobial agents • Combination of antimicrobial agents • Chemoperophylaxis. • Classification, spectrum of activity, dose, routes of administration and adverse effects of penicillin, cephalosporins, aminoglycosides, tetracyclines, chloramphenicol, antitubercular drugs. **XIII.Miscellaneous.** • IV fluids- various preparations and their usage. • Electrolyte supplements • Immunosuppressive agents • New drugs included in perfusion technology. • Drugs used in metabolic and electrolyte imbalance. **PRACTICALS:** 1. Preparation and prescription of drugs of relevance. 2. Experimental pharmacology directed to show the effects of commonly used drugs of relevance and interpretation of few charts.		

	APPLIED PATHOLOGY	**I. CARDIOVASCULAR SYSTEM** • Atherosclerosis- Definition, risk factors, briefly Pathogenesis & morphology, clinical significance and prevention. • Hypertension- Definition, types and briefly Pathogenesis and effects of Hypertension. • Aneurysms - Definition, classification, Pathology and complications. • Pathophysiology of Heart failure. • Cardiac hypertrophy - causes, Pathophysiology & Progression to Heart Failure. • Ischaemic heart diseases- Definition, Types. Briefly Pathophysiology, Pathology & Complications of various types of IHD. • Valvular Heart diseases- causes, Pathology & complication. Complications of artificial valves. • Cardiomyopathy - Definition, Types, causes and significance. • Pericardial effusion- causes, effects and diagnosis. • Congenital heart diseases - Basic defect and effects of important types of congenital heart diseases. **II. HAEMATOLOGY** • Anaemia - Definition, morphological types and diagnosis of anaemia. Brief concept about Haemolytic anaemia and polycythaemia. • Leukocyte disorders- Briefly leukaemia, leukocytosis, agranulocytosis etc., • Bleeding disorders- Definition, classification, causes & effects of important types of bleeding disorders. Briefly various laboratory tests used to diagnose bleeding disorders. **III. RESPIRATORY SYSTEM** • Chronic obstructive airway diseases - Definition and types. Briefly causes, Pathology and complications of each type of COPD. • Briefly concept about obstructive versus restrictive pulmonary disease. • Pneumoconiosis- Definition, types, Pathology and effects in brief. • Pulmonary congestion and edema. • Pleural effusion - causes, effects and diagnosis. **IV. RENAL SYSTEM** • Clinical manifestations of renal diseases. Briefly causes, mechanism, effects and laboratory diagnosis of ARF & CRS. Briefly Glomerulonephritis and Pyelonephritis. • End stage renal disease - Definition, causes, effects and role of dialysis and renal transplantation in its management. • Brief concept about obstructive uropathy. **PRACTICALS** 1. Description & diagnosis of the following gross specimens.		Y

		a. Atherosclerosis. b. Aortic aneurysm. c. Myocardial infraction. d. Emphysema e. Chronic glomerulonephritis. f. Chronic pyelonephritis. 2. Interpretation & diagnosis of the following charts. a. hematology Chart - AML, CML, Hemophilia, neutrophilia, eosinophilia. b. Urine Chart - ARF, CRF, Acute glomerulonephritis. 3. Estimation of Hemoglobin. 4. Estimation Bleeding & Clotting time.		
	APPLIED MICRO BIOLOGY	**THEORY - 40 HOURS** 1. Health care associated infections and Antimicrobial resistance: Infections that patients acquire during the course of receiving treatment for other conditions within a healthcare setting like Methicillin Resistant Staphylococcus aureus infections, Infections caused by Clostriduium difficle, Vancomycin resistant enterococci etc. Catheter related blood stream infections, Ventilator associated pneumonia, Catheter Related urinary tract infections, Surveillance of emerging resistance and changing flora. The impact and cost attributed to Hospital Associated infection. 6 Hours 2. Disease communicable to Healthcare workers in hospital set up and its preventive measure: Occupationally acquired infections in healthcare professionals by respiratory route (tuberculosis, varicella-zoster, respiratory synctial virus etc), blood borne transmission (HIV, Hepatitis B, Hepatitis C, Cytomegalovirus, Ebola virus etc), oro faecal route (Salmonella, Hepatitis A etc), direct contact (Herpes Simplex Virus etc). Preventive measures to combat the spread of these infections by monitoring and control. 6 Hours 3. Microbiological surveillance and sampling: Required to determine the frequency of potential bacterial pathogens including Streptococcus pneumoniae, Haemophilus influenzae, and Moraxella catarrhalis and also to assess the antimicrobial resistance. Sampling: rinse technique, direct surface agar plating technique. 6 Hours 4. Importance of sterilization: a. Disinfection of instruments used in patient care: Classification, different methods, advantages and disadvantages of the various methods. b. Disinfection of the patient care unit c. Infection control measures for ICU's 10 Hours 5. Sterilization:		Y

		a. Rooms: Gaseous sterilization, one atmosphere uniform glow discharge plasma (OAUGDP). b. Equipments: classification of the instruments and appropriate methods of sterilization. c. Central supply department: the four areas and the floor plan for instrument cleaning, high-level disinfecting and sterilizing areas. 8 Hours 6. Preparation of materials for autoclaving: Packing of different types of materials, loading, holding time and unloading. 4 Hours **PRACTICALS- 30 HOURS** 1. Principles of autoclaving & quality control of Sterilization. 2. Collection of specimen from outpatient units, inpatient units, minor operation theater and major operation theater for sterility testing. 3. The various methods employed for sterility testing. 4. Interpretation of results of sterility testing. 5. Disinfection of wards, OT and Laboratory.		
	MEDICINE RELEVANT TO ANAESTHESIA TECHNOLOGY	Diabetes Mellitus Hypertension Ischaemic heart disease Obesity Elderly patient Pregnancy Shock COPD Chronic renal failure Chronic liver disease/failure Anaemia Pediatric patient infant / neonate Epilepsy CVA		Y
	3rd YEAR			
	Paper-I - Anaesthesia Technology - Clinical	**1. Pre operative preparation** Pre Anaesthetic Assessment History of present assessment Past history with emphasis on previous illness and surgery Personal history - Smoking, alcohol Physical examination - General and systemic **2. Informed consent** **3. Premedication: Aims** a. Narcotics b. Antihistamines c. Antacids d. Others - NTG **4. Investigations** Biochemistry - Blood, glucose, Urea, Creatinine Haematology - Haemogram, Prothrombin Time, Partial thromboplastin time, BT, CT Urine- Complete urine analysis ECG Chest X-ray		Y

		ABG **5. Criteria used for accepting the case for surgery** **6. Equipment** Checking the machine, laryngoscopes, tubes, airways etc. suction apparatus, oxygen Cylinder, anaesthetic drugs and emergency drugs. **7. Monitoring system** **8. Induction - Anaesthesia** Endotracheal intubation, confirming the tube position and securing the tube Maintenance of anaesthesia Fluid / Blood and electrolyte balance Reversal from anaesthesia - drugs used **9. Preparations** a. Identification b. Consent Course Contents Third Year Main Subjects c. NPO d. Prosthesis e. Lab results f. Consultation g. Blood **10. Testing Machine** a. Gas supply b. Flow meters c. O2 bypass d. Valves e. Vaporises **11. Emergency Drugs** a. Atropine b. Epinephrine c. Isoprenaline d. Ephedrine e. Aminophylline f. Hydrocortizone g. Soda Bicarb h. Dopamine i. Norepinephrine j. Dobutamine **12. I. V. Infusion** a. Site of cannulations b. Finding a vein c. Technique of venupuncture d. Special difficulty **13. Protection of the Patient** a. The eyes b. The ears c. The skin d. The lips, tongue, teeth e. Veins, arteries f. Peripheral nerves **14. Intubation** a. Choice of ETT		

		b. Choice of Laryngoscope c. Techniques of intubation d. Complications e. Difficult intubation **15. Emergence, Termination and Recovery** 1. Reversal 2. Oropharyngeal toilet 3. E T Suction 4. Deflation of the cuff 5. Removal of the tube 6. Transfer of the patient 7. In the recovery room a. Patient identification b. Diagnosis & Surgery c. Type of anesthesia used d. Fluid balance e. B P g. Any complications h. Instructions about ventilation, vital sings 8. Problems in RR a. B.P. hypo, hypertension b. HR- Tachy, bradycardia c. Pallor, cyanosis, dyspnea d. Restlessness e. Neurological- Seizures f. Sweating		
	Paper-II - Anaesthesia Technology - Applied	History of anaesthesia in detail Methods of anaesthesia Inhalational Anaesthesia Minimum alveolar anaesthetic concentration Stages of ether anaesthesia Halothane Isoflurane Sevoflurane Nitrous oxide Narcotic drugs Opioids analgesics Morphine Pethidine Fentanyl Buprenorphine Tramadol Difficult intubation Muscle relaxants Neuromuscular blockers Suxamethorium Pancuronium Vecuronium Atracurium Rocuronium Reversal agents Intravenous anaesthetic agents Thiopentone Propofol		Y

		Ketamine Intraoperative management Confirm the identity of the patient Transferring the patient Recovery room - setup, things needed expected problems Post operative complications and management CPR Monitoring during anaesthesia and surgery Regional anaesthesia Spinal Anaesthesia Epidural Anaesthesia Nerve blocks Benzodiazapines Phenothazines Neuromuscular transmission Nerve stimulators Reversal of neuromuscular blockage Drugs acting on sympathetic nervous system Adrenaline Noradrenaline Dopamine Dobutamine Milrinone Isoprenaline Local anaesthetic agents Lignocaine Bupivacaine Complications and accidents during anaesthesia **Complications:** **I. Related to equipment** 1. Hypoxemia 2. Hyercapnea 3. Increased airway pressure 4. Decreased airway pressure 5. Deep anesthesia 6. Thermal & electrical injuries 7. Monitoring instruments 8. Presenting anesthesia equipment complications a. Being prepared with back up ventilation b. Pre-use checkout c. Maintenance d. User education **II. Related to airway** a. Difficult intubations b. Airway Trauma **III. Cardiovascular System** a. Hypotension b. Hypertension c. Tachycardia d. Bradycardia e. Arrhythmias f. Ischemia & infarction		
	Paper - III - Anaesthesia	Anaesthesia & co- existing diseases Ischaemic heart disease Hypertension		

	Technology - Advanced	Congestive cardiac failure Arrhythmia & heart blocks Chronic bronchitis & COPD Bronchial asthma Peadiatric anaesthesia Liver disease and anaesthesia Renal disease and anaesthesia Obesity and anaesthesia Diabetes mellitus and anaesthesia Thyroid disease and anaesthesia **Obstetric Anaesthesia:** 1. Epidural analgesia 2. Anaesthesia for LSCS 3. Special situations: pre -eclampsia Anaesthesia for common surgical disorders Anaesthesia for special situations Shock, low cardiac output & cardiac arrest Pulmonary function tests & their significance Ventilators - types & methods of ventilation Humidification Aerosal therapy **Resuscitation of the Newborn** 1. Apgar scoring system 2. Use of drugs 3. Temperature control **Anaesthesia for Thoracic Surgery** 1. Use of double lumen tubes 2. Anesthesia for bronchoscopy 3. Thymectomy **Anaesthesia for cardiac surgery** 1. Preparations & monitoring 2. Heparin & Protamine 3. Care & use of arterial & venous lines 4. Maintenance of body temperature 5. Anaesthesia for open heart surgery 6. Transport to ICU		Y

I Certify that this is a true copy of the original document seen by me Anjana Wilson

Hcpc NO: ODP041595

Date - 25/8/23