This is for information to the Candidates who have successfully submitted their forms for the following posts –

1. **Sister Gr.II – Advert no. I-50/A/Rectt/2021-22**
2. **Technician (Radiology- Advert no. I-50/B/Rectt/2021-22**
3. **Medical Lab Technologist- Advert no. I-50/D/Rectt/2021-22**
4. **Junior Medical Lab Technologist- Advert no. I-50/E/Rectt/2021-22**
5. **Tutor (College of Nursing) - Advert no. I-34/B/Rectt/2021-22**

IMPORTANT INFORMATION -

- The Date of Examination has been fixed as **20th June 2022**, as approved by competent authorities
- The Admit Cards for the same will be made available for download soon. The Candidates should regularly check the SGPGI website for updates with regard to the same.
- The syllabus for the examination is being published on the SGPGI website, as approved by competent authorities

Examination Section, SGPGI

S_No	Post	Adv	Group	Eligibity (Syllabus)	Description of syllabus	Question paper details	Annexures
1	Sister Grade II	I/50/A/Rectt /2021-22	B	The Syllabus for the written examination will be based on the Syllabus / Curriculum of Diploma in General Nursing & Midwifery/ BSc Nursing	Basic sciences, nutrition and dietetics, psychology, mental, health and psychiatric nursing, fundamentals of nursing, community health nursing, medical and surgical nursing, pediatric nursing, obstetrical nursing, principles of administration and supervision, education and trends in nursing	General English: 10 General Knowledge: 10 Reasoning: 10 Mathematical Aptitude: 10 Subject related: 60	Annexure 1
2	Technician Radiology	I/50/B/Rectt /2021-22	C	The Syllabus for the written examination will be based on relevant area specific to the job at the level of B.Sc. (Hons.) in Radiography / Diploma in Radiography academic syllabus along with Radiographic Technician practices	Basic Anatomy & Physiology, Basic Bio-Chemistry, Radiography General, Radiography Special, General Physics , Radiation Physics, Darkroom Techniques, General Principles of Hospital Practice & Patient, Clinical Radiography Techniques, Radiation Safety and Quality Control	General English: 10 General Knowledge: 10 Reasoning: 10 Mathematical Aptitude: 10 Subject related: 60	Annexure 2
3	Medical Laboratory Tech	I/50/D/Rectt /2021-22	C	The Syllabus for the written examination will be based on relevant area specific to the job at the level of Diploma in Medical Laboratory Technology/ Bsc in Medical Laboratory Technology	General Anatomy & Physiology, Clinical Biochemistry, Clinical Microbiology & Immunology, Clinical Pathology, Advance Diagnostic Techniques, Clinical Haematology, Serology, Histopathology Cytology techniques, Blood Banking (Practical Blood Transfusion), Safety and First Aid, Biomedical waste management	General English: 10 General Knowledge: 10 Reasoning: 10 Mathematical Aptitude: 10 Subject related: 60	Annexure 3
4	Junior Medical Laboratory Tech	I/50/E/Rectt /2021-22	C	The Syllabus for the written examination will be based on relevant area specific to the job at the level of Diploma in Medical Laboratory Technology	General Anatomy & Physiology, Clinical Biochemistry, Clinical Microbiology & Immunology, Clinical Pathology, Advance Diagnostic Techniques, Clinical Haematology, Serology, Histopathology Cytology techniques, Blood Banking (Practical Blood Transfusion), Safety and First Aid, Biomedical waste management	General English: 10 General Knowledge: 10 Reasoning: 10 Mathematical Aptitude: 10 Subject related: 60	Annexure 4
5	Tutor (college of nursing)	I/34/B /Rectt /2021-22	B	The Syllabus for the written examination will be based on the Syllabus / Curriculum of B.Sc. in Nursing/ registered nurse and midwife with sister Tutors Diploma.	Basic sciences, nutrition and dietetics, psychology, mental, health and psychiatric nursing, fundamentals of nursing, community health nursing, medical and surgical nursing, pediatric nursing, obstetrical nursing, principles of administration and supervision, education and trends in nursing	General English: 10 General Knowledge: 10 Reasoning: 10 Mathematical Aptitude: 10 Subject related: 60	Annexure 5

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Indicative Syllabus: For General Aptitude

a) Reasoning: It would include questions of both verbal and non-verbal type. This component may include questions on analogies, similarities and differences, spatial orientation, problem solving, analysis, judgement, decision making, discrimination, observation, relationship concepts, arithmetical reasoning and figural classification, arithmetic number series, non-verbal series, coding and decoding, statement conclusion, etc. the topics are, Symbolic/Number Analogy, Figural Analogy, Semantic Classification, Symbolic/Number Classification, Figural Classification, Semantic Series, Number Series, Figural Series, Problem Solving, Word Building, coding & decoding, Numerical Operations, symbolic Operations, Trends, Space Orientation, Space Visualization, Venn Diagrams, Drawing inferences, Punched hole/pattern-folding & unfolding, Figural Pattern – folding and completion, indexing, Address matching, Date & city matching, Classification of centre codes/roll numbers, Small & Capital letters/numbers coding, decoding and classification, Embedded Figures, Critical thing, Emotional Intelligence, Social Intelligence, Other sub-topics, if any.

b) General Knowledge: Questions in this component will be aimed at testing the candidate's general awareness of the environment around him and its application to society. Questions will also be designed to test knowledge of current events and of such matters of every day observations and experience in their scientific aspect as may be expected of any educated person. The test will also include questions relating to India and its neighbouring countries especially pertaining History, Culture, Geography, Economic Scene, General Policy & Scientific Research.

c) Mathematics Aptitute: The questions will be designed to test the ability of appropriate use of numbers and number sense of the candidate. The scope of the test will be computation of whole numbers, decimals, fractions and relationships between numbers, Percentage, Ration & Proportion, Square roots, Averages, Interest, Profit and Loss, Discount, Partnership Business, Mixture and Allegation, Time and distance, Time & Work, Basic algebraic identities of School Algebra & Elementary surds, Graphs of Linear Equations, Triangle and its various kinds of centres, Congruence and similarity of triangles, Circle and its chords, tangents, angles subtended by chords of a circle common tangents to two or more circles, Triangle, Quadrilaterals, Regular Polygons, Circle, Right Prism, Right Circular Cone, Right Circular Cylinder, Sphere, Hemispheres, Rectangular Parallelepiped, Regular Right Pyramid with triangular or square base, Trigonometric ration, Degree and Radian Measures, Standard Identities, Complementary angles, Heights and Distances, Histogram, Frequency, polygon, Bar diagram & Pie chart.

d) General English: Candidates' ability to understand correct English, his basic comprehension and writing ability,would be tested. Questions in this component will be designed to test the candidate's understanding and knowledge of English language and will be based on spot the error, fill in the blanks, synonyms, antonyms, spelling/detecting mis-spelt words, idioms & phrases, one word substitution, improvement of sentences, active/passive voice of verbs, conversion into direct/indirect narration, shuffling of sentence parts, shuffling of sentences in a passage, comprehension passage and any other English language questions at the level of Matriculation/Higher Secondary.

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BASIC SCIENCES

1. Anatomical and biochemical structures to explain the physiological functions of human body and factors, which may disturb these, and mechanism of such disturbances.
2. Various groups of micro-organisms of clinical importance.
3. Disinfection and sterilization for the prevention of diseases in the hospital and community.
4. Collect and handle specimens for various diagnostic tests.
5. Enumerate weights and measures and demonstrate skill in calculation of dosage and preparation of solutions.
6. Read and interpret prescriptions and care for drugs according to the regulations.
7. Describe various groups of drugs acting on different systems of the body.
8. Recognize the toxic symptoms related to common drugs and poisons.

2. NUTRITION AND DIETETICS

1. Various nutrients and their importance in the maintenance of health.
2. Plan diets suitable to socio-economic status for different age groups and physiological conditions.
3. Nutritional deficiencies and their prevention and management.
4. Plan therapeutic diets for various disease conditions.

3. PSYCHOLOGY MENTAL HEALTH AND PSYCHIATRIC NURSING

1. Normal and deviations in behaviour among various age groups and their cause.
2. Explain the principles of psychology and its application in health and diseases.
3. Interpret behaviour of self and others.
4. Recognize deviations from normal behaviour and provide guidance and counselling.
5. Dynamics of patient's behaviour and its application in providing nursing care.
6. Communication and maintain interpersonal relations.
7. Therapies utilized in psychiatry and the various roles of nurses in psychiatric nursing.

4. FUNDAMENTALS OF NURSING

1. Describe nursing as a profession, its scope, etiquettes & ethics.
2. First aid treatments.
3. Congenial and safe environment to the patient.
4. Carry out basic nursing procedures for the care of the patients with an understanding of the scientific principles involved.
5. Make observations and records.
6. Administer prescribed medications and carry out treatments.
7. Maintain records of patients and nursing care.

5. COMMUNITY HEALTH NURSING

1. Personal, environmental, social and cultural factors contributing to health of individual, family and community.
2. Methods of control of spread of diseases.
3. Needs for health education and evaluate the effect of the same to patients, families and community.
4. Prepare and use appropriate audio-visual aids for imparting health education.
5. Symptoms of social disorganization and social pathology.
6. Demonstrate skills in medico-social work.
7. Principles of health care to mothers and children and the services available for them in urban and rural communities.
8. Deviations from normal amongst mother and children and take necessary action in clinics, health centres and homes.
9. Educate the community about need and methods of family planning.
10. Demonstrate skill in community diagnosis and in delivery of community nursing services in accordance with the national health care system.

6. MEDICAL AND SURGICAL NURSING

1. Causes, pathophysiology, symptoms, treatment and prophylactic measures in common medical and surgical conditions affecting various systems of the body.
2. Provide patient centered nursing care to patients with common medical and surgical conditions affecting various systems of the body.
3. Prepare operation theatre for surgery and assist in operative procedures.
4. Identify common equipment used in operation theatre
5. Explain the anesthesia used, with their effects and dangers, and care for an anesthetized patient until such time as he recovers from the effect of anesthesia.
6. Recognize and provide first aid in case of common emergencies using the resuscitation equipment including intubation.
7. Care for critically ill patients who required support for maintaining vital functions.
8. (viii) Provide first aid in case of disaster, emergency and accidents and demonstrate skill in transporting the casualties.
9. (ix) Organize casualty/emergency services.
10. (x) Explain infectious diseases, their transmission and barrier nursing in hospital and community.

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7. PEDIATRIC NURSING

1. Describe growth and development, nutritional and psychological needs of children at different age group.
2. Explain basic principles involved in pediatric nursing.
3. Provide nursing management to neonates and children with medical and surgical disorders.
4. Recognize emergencies in neonates and children and take appropriate first aid measures.
5. Manage normal newborn and low birth weight baby.
6. Describe various aspects of preventive pediatric nursing and be able to practice them while rendering nursing care in a hospital or community.

8. OBSTETRICAL NURSING

1. Anatomy and physiology of pregnancy, child-birth and puerperium.
2. Antenatal care to mothers.
3. Episiotomy and suture a first and second -degree tear.
4. Domiciliary services to mothers and children
5. Management of common obstetrical emergencies needing immediate treatment.
6. Family welfare advice.

9. PRINCIPLES OF ADMINISTRATION AND SUPERVISION, EDUCATION AND TRENDS IN NURSING

1. Principles of administration and its application to health administration at different levels.
2. Organizational pattern for nursing components of hospital and public health service.
3. Effective human relations to improve efficiency of the staff.
4. Principles of supervision and develop skill in supervisory techniques.
5. Trends in nursing and nursing education in India and abroad.
6. Nursing as a profession and the rights, responsibilities and adjustment in professional life.
7. Methods of teaching applicable to nursing

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A. Anatomy and Physiology

Structure of the body–cells, tissues. Musculoskeletal System: Skull, Vertebral column, Shoulder Girdle Bones of upper extremities, Bones of lower extremities, pelvis and its muscles, Ossification. Cardiovascular System: Heart–blood– Arteries–Veins. Lymphatic System: Circulation of Lymph, Lymph glands, Thoracic duct. Digestive System: Mouth–oesophagus– stomach–small intestines large intestines spleen Liver Gall bladder Pancreas. Respiratory System: Nose, Larynx- Trachea-Lungs Bony-case. Nervous System: Brain-meninges- ventricles-Spinal cord and nerves. Eye: Structure and its function. Ear: Structure and function. Surface Anatomy and Cross–sectional Anatomy. Reproductive System: Female & Male organs. Urinary System: Kidneys, Ureters, Bladder, Prostate and Urethra. Skin: Structure and its function. Endocrine System: Pituitary gland, Penial gland, Thymus gland, thyroid and parathyroid gland, suprarenal glands

B. Dark room technique

Photographic Process: Light image, Image produced by radiation, Light Sensitive materials, latent image. Film Material: The structure of X–ray & Imaging films, Resolving power, Grains of films, sensitivity of film, contrast of films, Type of films. X–ray Film Storage: Storage of unexposed films. Screens: Construction of intensifying screens. Choice of fluorescent material. Intensification factor, Detail, Sharpness. Speed, Screen contact, care of intensifying screens, Types of Screens. Cassettes: Cassette designs. Care of cassette, Mounting of intensifying screen in the cassettes, Various types of cassettes. Safe Light: Constituents, filter, testing. Film Processing: Constituents of processing solution and replenishes. Factors affecting the development. Types of developer and fixer, Factors affecting the use of fixer. Silver recovery methods. Film Rising, Washing and Drying: Intermediate rinse–washing and drying. Film Processing Equipment: Manual and Automatic processing. Dark Room Design: Outlay and materials used. Radiographic Image: The sharpness, contrast, detail, definition, viewing conditions & artifacts. Miscellaneous: Trimming, identification of films, legends, records filing, report distribution

C. General Physics

Elementary idea of thermionic emission, Electron–idea of mass and nature of charge, Coulomb's law, Electric field, Unit of potential. Ohm's law, Units of resistance, potential and current, Combination of resistance in series and parallel. Fuses, Units of electric power, Earthing of electrical equipment. Magnetic fields, Lines of force, Field pattern due to a straight current carrying conductor, coil carrying current, electromagnet, Construction and working of galvanometer, voltammeter and ammeter, (moving coil type and moving magnet type).Heat and methods of transference of heat, condensers, Inductance and Impedance. A.C. and D.C. currents-effective current, RMS value, peak value. Electromagnetic induction – Laws, fields, influence. Transformers – Principles, construction, and uses of step down and High tension transformers. Diode values and their use in rectifiers solid-state rectifiers, its various rectifying circuits uses in X–ray machines, production of X–rays and their properties, X–ray tube–Stationary anode and rotating anode & therapy tubes, X–ray circuit, interlocking circuits, relay and timers.

D. Radiographic Techniques

Radiography Techniques: Upper Limb: Fingers individual and as a whole hands, Carpal bones wrists, Forearm, elbow–head of radius, humerus, shoulder joint, Acromio- clavicular joint, scapula, sterno- clavicular joint, small joints. Lower Limb: Toes, foot, calcaneum & other tarsal bones, ankle joint, legs, knees, patella, fibula, femur, intercondylar notch. Hip & Pelvis: Hip, Neck of femur, threatre procedure, for hip pinning or reduction, pelvis, sacro-iliac joints, pubic bones, acetabulum. Vertebral Column: Curves, postures, relative levels atlanto, occipital region, odontoid process, Cervical spine, thoracic Inlet, Cervico, thoracic spine, lumbosacral spine, sacrum, coccyscoliosis, kyphosis, flexion, extension and neutral. Bones of the thorax: Sternum ribs. Skull: Land marks, Cranium, facial bones, maxilla, mandible, zygoma, T.M. joints, mastoids, petrous bones, optic foramen, sells turcica, P.N.S. Chest: Chest in teleradiography, chest supine & portable, Lordotic, apicogram and MMR. Abdomen: Preparation, indication and contraindication, acute abdomen, pregnancy abdomen for multiplicity maturity and foetal abnormality. Pelvirnetry. Soft tissue: Neck and breast. Emergency Radiography: Bedside radiography, O.T. Radiography. Radiography for age evidence: Bone age evidence. Dental Radiography: Occlusal view, Dental X–ray, Panoramic view

E. Radiographic procedures

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I. (i) Pathology: Definition, cell growth, cell deformities, cell damage, defence mechanism, cell repair.(ii) Neoplasia: Benign & Malignant including its mode of growth and metastasis. (iii) Radiation: Local and systemic. (iv) Radiotherapy techniques. (v) Emergency in Radiology.II. (i) Contrast media. (ii) Urinary Tract: I.V.P., Retrograde Pyelography, Cystourethrography. Presacral Insufflation. (iii) Biliary Tract: Oral cholecystography, I.V.C, Transhepatic percutaneous cholangiography pre- operative cholangiography – T-tube cholangiography, E.R.C.P. (iv) Tomography: Principle, equipment and types of movements, procedure. (v) Venography: Splenoportovenography, Peripheral venography. (vi) Lymphangiography. (vii) Marnmography and Xeroradiography. (viii) Radiculography. (ix) Dacrocystography. III. (i) Gastro-intestinal Tract: Ba-swallow, Ba-meal upper G.I.T., Ba-meal follow through, Ba-Enema. (ii) Female Genital Tract: Hystero- Salpingography, Gynecography, Placentography & Pelvimetry. (iii) Angiography: Carotid angiography, Femoral arteriography, Aortography, Selective angiography etc. (iv) CNS: Ventriculography, Myelography, Pneumoencephalography. (v) Sialography (vi) Sinography (vii) Nasopharyngography (viii) Laryngography (ix) Bronchography (x) Arthrography (xi) Discography

F. Radiation Physics and related equipment

I. Latent images formation and its processing. Various units used for measuring radiation–Roentgen, rad and rem. Construction of X–ray tube, X–rays–its production and properties. Ionization chambers, G.M. Counter and Scintillation Counter, Interaction of X– ray with matter. Quality and quantity of X–rays, HVT, linear absorption coefficient, Grid, Cones and Filters. Inverse square law, scattered radiations and appliances used to reduce it. II. Radioactivity Curie, Half life, decay factor. Details about radium, cobalt and caesium. Doses–dose and dose rate, exposure dose, exit dose, surface dose, depth dose, isodose charts and their uses. III. Radiation Hazards, Protection against it, film badge, pocket ionization chamber, maximum permissible dose. (a) High-tension control equipment – Diagnostic H.T. circuits, high tension generators, half wave full wave three phase, condensers discharge, contact voltage high tension switches, control and establishing equipment, tube filament supply, mains compensator mains resistance compensator. X-ray tubes – design, rating and care of X-ray tubes, practical considerations in choice of focus, inherent filtration. MAS meter elementary principles and construction, importance as check on. (i) Radiographic results. (ii) Apparatus behaviour and additive tube loading, exposure timers – spring activated, synchronous motor, value (Low-tension ionization testing timer accuracy). Interlocks and safety devices. (iii) Circuits – Simple circuit diagram and illustration of sequence from mains supply to control X-ray exposure bean. Centering devices – mechanical and optical, interaction of X-rays and the body transmission in body tissues.

(b) Scattered radiation – control of scattered radiation, cones, diaphragm, single and multiple filters grid ratio in relation to KV, construction and operation, focused and non -- focused, single stroke reciprocating and oscillating potter – bucky, diaphragms, criss cross grids, stationary grids, use etc.

(c) Production of X-ray tubes and high tension circuits for the production of control panel and control safety device and interlocks, basic principles of mega voltage X-ray machines.

(d) Fluoroscopy – Tube filtration, diaphragm, tilting couch screen grid and exploratory and control safety devices, compressors, protection, electrical radiographic and mechanical control, use and care of couch accessory fittings. (e) Special equipment – body section radiography, apparatus and controls simultaneous multi section accessories specialized couches, skull table, mobile units. Image intensifiers, principles, optical systems, for viewing and recording final image electrical and x- ray supply protection, applications, including cine radiography, mass miniature radiography, special radiography, equipment for high speed serial techniques (etc.) rapid cassette changer rapid films changer, roll films, full size and miniature, biplane equipment, grids, protection, problems of processing and presentation, care and maintenance -- general principle and routine use of charts supplied by manufactures, radiographic calibration procedure.

G. Patient-care

(a) Hospital staffing and organisation, records relating to patients and departmental statistics, professional attitude of the radiographer to patients and other members of the staff, medico legal aspects, minimising waiting time, appointments organisation stock taking and stock keeping.

(b) Care of patient: - first contact with patient in the department handling of chair and stretcher patients, lifting of ill and injured patients, elementary hygiene, personal cleanliness, hygiene in relation to patients. E.g. clean linen

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and receptive nursing care, temperature. (c) First Aid: - Shock, asphyxia, convulsions, artificial respiration, electric shock, burns, scalds, haemorrhage, pressure point, tourniquet, fractures, splints, bandaging, foreign bodies, poisons, drug, reactions, administration of oxygen.

(d) Preparation of a patient for general X-ray examinations. Departmental instruction to out patients or ward staff, use of aperients, enema and colonic irrigation, flatulence and flatus causes and methods of relief, principles of catheterization and intubations, premeditation, its uses and methods, anaesthetised patients, nursing care before and after special X-ray examinations e.g. in neurological, vascular and respiratory conditions diabetic patients, special attention to food, trauma hazards.

(e) Preparation of patients for special x- ray examinations barium enema, barium meal, intravenous pyelography cholecystography etc. and their administration.

(f) Principles and aspects: - Methods of sterilization, care and identification of instruments and surgical dressings in common use, setting of trays and trolleys for various examinations etc. intravenous pyelography, biopsy, elementary operating theatre produce. (g) Drugs in department- storage, labeling checking, regulations regarding (h) Contrast media- barium preparations, iodine

H. Radiographic Photography:

(a) Photographic aspects of radiography – the fundamentals of the photographic process, light sensitive salts of silver, the photographic emulsion gelatin as suspension medium, size and frequency of the silver halide grain in relation to sensitively and contrast, formation of the latent image, chemical development, construction of x-ray film base material, substratum coating, emulsion, coating anti-abrasive super coating sensitivity, storage of unexposed film.

(b) X-ray materials: - Type of emulsion, characteristics and control screen films, non screen films, dental films, comparative speed and contrast to light and x-rays. Characteristics of x-ray emulsions, characteristics curves of x-ray film assessment of the results of correct exposure under & over exposure, density (D max) speed, contrast (Gamma infinity) graduation, fog, grain, exposure, kilovoltage and developing latitude. Intensifying screens fluorescence application of fluorescence in radiography, construction of an intensifying screen, types of emulsion in relation to type of salt, size of grain, coating, weight, kilovoltage, mounting and general care of screens, after glow test for reciprocate failure, intermittency effect. X-ray, testing a cassette for proving good screen contact, general case of cassettes. X-ray developers – characteristics and detail freedom from chemical fog and staining, long life possibility of degeneration. Standardization of quality of developers and development – function and constituents of an x-ray developer, standardization by time and temperature development latitude, exhaustion of a developer, replenishment of developers, ultra rapid developers, combined developer and fixer, fixers and fixing, hardening agent, time of fixation, exhaustion of a fixer, electrolytic silver recovery and fixer regeneration, rapid fixers, separate hardening. Rinsing, washing and drying – objects of rinsing and washing, methods, employed, methods of drying films, processing – preparation of solutions, available water supply, nature of mixing, vessels, order of mixing solutions, filtration, making stock solutions, storage of dry chemicals, storage of solutions, processing units, hangers, care of hangers, control of temperature by heating elements and thermostat, water mixer, by refrigeration, use of ice – film quality, ultra rapid processing, tank or dish units, stop bath rinse, wetting agents, after treatment of films. Automatic processing principles, procedure and regeneration of solutions. Knowledge of Atomic Energy Regulatory Board (AERB) regulations and rules.

I. Specialized investigations

Computed Tomography : Principles of CT – Basic Physics – Recent developments, applications etc. Positioning in CT Different types of contrast materials. Emergency treatment. Radiation hazards Disposal of unused matter.

Magnetic Resonance Imaging Principle – Physics – Techniques – Types of coils – Basic term used in MRI Operations, Applications, etc. Positioning in MRI. Different types of contrast materials. Emergency treatment. MRI hazards. Factors affecting quality of imaging.

Ultrasound: Physics – Types of ultrasound – Techniques of ultrasound scanning in different parts – positioning and filming – Principles of Doppler effect and colour Doppler.

Anatomy & Physiology

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a) Musculo skeletal system: Bones:– types, structure and functions
b) Digestive System: Gross anatomy of digestive organs, Physiology of Digestion, Digestive juices – Secretion, Composition and functions
c) Respiratory System: Gross anatomy of respiratory organs, Physiology of respiration, Oxygen and Carbon dioxide transport
d) Cardiovascular System : Gross anatomy of heart and blood vessels
e) Excretory System: Gross anatomy of excretory organs, Function of Kidneys, mechanism of urine formation, Structure and function of Kidney
f) Reproductive System: Gross anatomy of Male & Female reproductive organs, Physiology of menstruation
g) Cerebro spinal fluid: Formation, composition of CSF
h) Endocrine System: Gross anatomy of endocrine organs: Brief description of Endocrine hormone and their functions

Biochemistry

a) Introduction and scope of Biochemistry, cleaning and care of laboratory glass ware and equipments, preparation and storage of Distilled water, Analytical balance, calorimeter, spectrophotometer, pH Meter, flame photometer, S.I. unitof measurement, Preservation and disposal of biological sample, Basic statistics –mean, median, modes, SD, CV, normal reference ranges. Acid and base, pH, buffer solution, indicator, standard solution, storage of chemicals, water, electrolytes, acid base balance
b) Carbohydrate, Lipids, Proteins – Classification, Properties, Biologicalimportance, functions. Amino acids, nucleic acids, Enzymes, Co–enzymes – Definition, classifications,Biological role/importance.
c) Glycolysis, TCA–cycle, Electron transport chain, Pentose Phosphate Pathway, Glyconeogenesis, Gluconeogenesis, Cori–cycle, Blood sugar and its regulation.
d) Fatty acid, cholesterol, lipoproteins, Purine ribonucleotide – Biosynthesis,utilization, Ketone bodies formation and its utilization.
e) Amino acids, vitamins, mineral – classification, Biological role, deficiency state.Transamination, Deamination, Biological importance of catecholamine, GABA,Serotonin, Histamine, Melanin.
f) Tumour markers: Brief history, classifications, clinical applications,
g) Laboratory test (AFP,CEA,PSA)
   - Liver function test, renal function test.
   - Thyroid function test, Enzymes and co–enzyme in diagnosis of the diseases,Hormone analysis.
   - Cardiac function test
   - Qualitative test for – Carbohydrates, lipids, proteins, Bence Jonce's Protein
   - Estimation of Serum electrolytes, and bicarbonates Blood sugar
   - Quantitative test for organic constituent (Urea, uric acid, creatinine) inorganicconstituent (sodium, Potassium, calcium, ammonia, chloride, Phosphate, bicarbonate and sulphate in urine with clinical significance and study of abnormal constituent or urine (glucose, Protein ketone bodies, blood, bile salt, bile pigments.
   - Radio Immuno Assay (RIA)
   - Enzyme Link Immuno sorbent Assay (ELISA)
   - Chromatography (thin layer paper, gas, liquid Electrophoresis, (gelelectrophoresis, liquid electrophoresis)

Microbiology

a) Introduction, brief history of Microbiology, origin of microbial life – theory ofspontaneous generation.

Safety measures in microbiology

- Classifications and nomenclature of bacteria (five kingdom concept)
- Sterilization – Principle, methods, antiseptic, disinfectants.
- General characteristic of Bacteria, anatomy of bacteria (shape, size,components)
- Growth and nutrition of bacteria, classification of bacteria on the basis ofnutritional requirements, measurement of cell mass and factor affecting growth.
- Cultivation of microbes (Bacteria)
- Culture technique (media preparation and inoculation
- Isolation of Pure cultures (streak plate, spread plate, pours plate and serialdilution)
- Identification of microbes by colony morphology.

b) Bacteriology, Normal Micro flora of human body, Germ theory of diseases,microbial infection (types, sources and transmission)

- Bacterial toxin (Endotoxin & exotoxin)
- Bacterial morphology, isolation, identification, Pathogenicity, Lab diagnosis(Culture, Biochemical test, Hanging drop method for motility, Anaerobic, aerobic culture methods of staphylococcus, streptococcus, Neisseria Gonorrhea, N. meningitidis, Clostridium tetani & C. perfringens
- E.coli, Vibrio cholera, Salmonella typhi, Shigella, Mycobacterium /

  Mycobacterium tuberculosis, Spirochetes– Treponema pallidum.
- Collection, preservation, transportation of clinical specimens for microbialinvestigation.
- Bacteriological methods of examination of blood, faeces, pus, sputum, throatswab and urine
- Antibiotic sensitivity test (Disc diffusion and broth dilution methods)
- Hospital acquired infections and their control.
- Waste disposal and management

c) Instruments & Glass ware:

- Autoclave, Incubator, Laminar Airflow,
- Hot air oven, water bath, vortex shaker,
- Petri dish, test tube, screw cap tube, glass spreader/ L–rods, Pasteur pipettes.

d) Medical Mycology:

- Classification and nomenclature of fungi
- General characteristics, structures, reproduction, cultivation

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- Medically important Division of fungi
- Morphology, culture characteristics, Pathogenicity, Lab diagnosis of CommonPathogenic fungi, (Aspergillus Sp., Candida Sp., Cryptococcus Sp., Dermatophytes, Penicillium Sp.)

e) Immunology

- Introduction, Antigens (Types and properties) Antibodies/ Immuno globintypes and properties)
- Antigen – antibody reactions and their applications (Agglutination, precipitation, complement fixation and neutralization tests)
- Immunity (Innate & Acquired)
- Hypersensitivity
- Immunodeficiency diseases

f) Serology

- Quality control measures in serology
- Common serological technique and their applications (VDRL, Widal, RA test,ASO, Pregnancy test, Hbs Ag and HCV, HIV, mantoux test)

g) Medical Virology

- Classification, nomenclature, general characteristics (Morphology, chemical,biological properties and multiplication)
- Cultivation of viruses (chick embryo, cell culture and animals)
- Bacteriophages (lytic and lysogenic cycles)
- Morphology, cultural characteristics, Pathogenicity and Laboratory diagnosisof the following viruses
  - Poliomyelitis
  - Mumps
  - Measles
  - Hepatitis A,B,C
  - Cytomegalovirus
  - Rabies
  - HIV/AIDS

h) Molecular Biology

- Introduction
- DNA & RNA
- Isolation of DNA (Genomic & Plasmid)
- Plasmids (types and Importance)

i) Principles, methods and application of

- ELISA, Immunoflourescence test, Western Blot
- PCR

Parasitology

a) Introduction, classification, characteristics of human parasites

- Collection, storage and transportation of specimens, preservation of parasites

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- Morphology, transmission, life cycle, Pathogenicity and Lab. Diagnosis of :-

Entamoeba histolytica, Giadia Lamblia, Trichomonas vaginalis, Leishmaniadonovani and L. tropica. Plasmodia species, Toxoplasma gondii, nematodes– Intestinal flukes, Blood flukes, Lung flukes, Liver fluke.

b) Common vectors of human diseases (mosquito, flies, ticks and fleas)

Pathology & Clinical Pathology , Basic Lab. Techniques & Instruments

(a) Pathology – definition, Branches

- Acute and Chronic inflammation (definition, characteristics)
- Sub acute, granulomatous inflammation (definition, characteristics)
- Changes in inflammation
- Chemical mediators of inflammation

(b) Cell Injury

- definition, causes, Ischaemia, necrosis
- apoptosis, degeneration, dehydration

(c) cellular adaptation of growth and differentiation (Atrophy, Hypertrophy,Hyperplasia, Metaplasia, Dysplasia, Anaplasia)

(d) Neoplasia (Benign and Malignant, definition, characteristics, etiology, spread)

(e) Cell of Immune System (B&T lymphocytes, macrophage, dendritic and langerhan's cells, NK Cells)

(f) Laboratory organization, role of laboratory technicians and responsibilities, safety measures, instruments, reporting and recording, common laboratory accidents and its preventions, handling of infectious materials, preventions and disposal, reagents and its storage.

(g) Types of solution (isotonic, hypotonic, hypertonic) quality control – (Principles and types

(h) Routine examination and clinical significant of –

- Urine
- Stool
- Body fluids (Ascitic fluid, pleural fluids, pericardial fluid, synovial fluids, CSFseminal fluids, sputum)
- Medico legal importance of semen analysis and abnormal morphology ofsperm

Haematology

Blood – components, collection, anticoagulants, preparation of smears &quality Haemoglobin,TLC, DLC with absolute count, WBC, Red cell Indices,Reticulocytes (methods of estimation, clinical significant)

Erythropoiesis, Granulopoiesis, Megakaryopoiesis (normal, abnormal & clinicalsignificant) Blood parasites, bone marrow smears

(a) Haemoglobin (normal and abnormal, Biosynthesis, Haemoglobinopathies andits investigation)

(b) RBC – structure, erythropoietin, functions

(c) WBC – Physiology, pathological variation

(d) Platelets – functions, purpuras, investigation of disorders, thrombocytosis,thrombocytopaenia

(e) Haemostasis (Coagulation) – Normal mechanism, abnormal, investigation ofabnormal haemostasis)

(f) Thrombosis – definition, causes

(g) Leukaemia – definition, classification (FAB), Acute & Chronic leukaemias, Lab. features of Acute & Chronic leukaemia (AML, ALL, CML, CLL) Aleukaemic Leukaemia, Leukaemoid reaction, Myelodysplastic syndrome (definition Lab. features)

(h) Anaemias (Normochromic, Normocytic, Megaloblastic, Microcytic hypochronic, Anaemia of infections, Haemolytic Anaemias) – Definition, classification, causes, laboratory, features and

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investigations)

(i) Thalassaemia (Trait, Minor, Major)

Sideroblastic Anaemia

Pancytopaenia, Aplastic Anaemias, Pure red cells aplasia (Definition, causes, lab. investigation etc)

(j) Coagulation disorders, lab. diagnosis, causes, haemophillia, DIC

(k) lymphoma – definition, causes, classification, lab. features/diagnosis

(l) Myeloma – definition, causes, classification, lab. features/diagnosis

(m) Polycythaemia – definition, causes, classification, lab. features/diagnosis

(n) Purpuras – definition, causes, classification, lab. features/diagnosis

(o) Staining – Leishman's stain, MGG, Giemsa's, PAS, Sudan B–Black, Iron, Fats, NAP, Acid Phosphatase, Esterase (Principle, composition, methods & results)

(ii) Blood Banking & Immuno Haematology

(a) Introduction

- Blood bank organization, equipment, donor registration
- Blood groups – types, technique of grouping
- Donor's selection, collection of blood
- Preservatives (storage), laboratory screening of blood for transfusion

(b) Cross matching, compatibility testing, Coomb's test, Transfusion reaction, Antigens, Antibodies (properties, production), Complements, Sensitization, Agglutination, Haemolysis, Neutralization, Precipitation, Complement fixation, Immune response.

(c) Diseases transmitted through blood and their screening, Haemolytic diseases of new born.

(d) Blood component preparation and its uses, Haemaphereis, Massive transfusion, Autologous transfusion, exchange transfusion.

Histopathology – Basic & Technique

(a) Cells and tissues – definition, cells and its organelles, function, cell cycle,mitosis meiosis

Epithelial tissues, definition, classifications & functions

Connective tissues (bone & cartilage)

Muscle tissues

Nerve tissues

(b) Histology of different systems & organs – Respiratory system, Alimentary system,Excretory systems, Reproductive system (male & female), Endocrine system.

(c) Histopathology technique –

- Sample reception, registering, labeling
- Fixative & fixation, (definition, classification, details of fixative, aims & object,fixation and preservation)
- Decalcification (definition, methods & test of end point decalcification)
- Grossing (definition, material required)
- Processing of tissues (manual & automatic)
- Waxes (types of waxes)
- Microtomies (types of microtome, knives, honing & stropping)
- Dehydration, clearing, impregnation, embedding or blocking (definition,chemicals used etc)

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- Section cutting, mounting, labeling

(d) Demonstration of (staining)

- Nucleic acids
- Lipids
- Proteins
- Nerve cells
- Muscels
- Bone
- Carbohydrates
- Amyloid
- Pigments
- Micro organism & parasites

(e) Biopsies of

- Renal biopsy, Lymph node biopsy
- Liver biopsy, muscle biopsy
- Kidneys, nerves fibres, skin biopsy
  (Processing, fixation, blocking, staining)

(f) Museum technique

(g) Immunohistochemistry (definition, purposes)

(h) Staining

- Theory, progressive & regressive, metachromasia, mordants, Accentators
- Staining preparation, procedures of –
- Haematoxylene and Eosin stain
  - MGG stain ;connective tissue stains,
  - Giemsa's stain ; mucicarmine stains
  - Z.N. stain

PAS stain

Cytology (Basic, technique) (20 Marks)

(a) Definition of cytology, material for operation and establishment of cytologylaboratory, role of cytology in the diagnosis, branches of cytology

(b) * Reception, registration, numbering and supply of material for collectingspecimens.

*Preparation of cytological smears

* Cytological fixation – aims & objects, chemical use for cytological fixation &methods of fixation

Progressive changes of the cells

* Nuclear criteria of malignancy

(c) * Exfoliative cytology – definition, source of samples for exfoliative cytology

*Body cavity fluid (Pleural effusion, Pericardial effusion, Ascitic fluids, sputum,urine, synovial fluids, CSF, Pus and Abscess)

– Methods of collection, fixation, methods of cytopreparations & staining

– Clotted & blood fluids (methods of cytopreparations)

– Cellular components in Benign and malignant effusion, acute and chronicinflammations

(d) Interventional cytology,(FNAC) Fine Needle Aspiration Cytology

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- Definition
- Application, methods

- Role of FNAC
  - Common sites
  - Advantage & disadvantage, limitations
  - Complications, precaution & contra-indications
  - Preparation of smears
  - General properties of wet and dry smears
  - Imprint, crush smears, biopsy sediments, cell block preparations

(e) Aspiration of specific lesion eg. cyst, thyroid, lung, peritoneum, prostate, testis,radiological imaging aids for FNAC

(f) Methods of collection, fixation and cytopreparation of samples from - FemaleGenital tracts, Respiratory tracts, Gastro-intestinal tracts, urinary tracts etc.

(g) Staining

- Pap's stain
  - Chemical requirements, preparation of various chemicals for pap's stain
  - Various pap's stain methods
  - Types of haematoxylene and its preparation
  - Stain maintenance
  - Preparation of graded alcohols (50%, 60%, 70%, 80% , 85%)
  - Preparation of 0.5%Hcl, Lithium Carbonate, EA modified, 0.2%Hcl, 1%Ammonium hydroxide in 70% ethanol, Orange G-6
- Bismark Brown, EA-50, EA-36
  - Procedures of Pap's stain

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  - PAS stain, Alcian Blue Staining
  - Mayers & South Gate Mucicarmine stain
  - Gram's stain
  - ZN stains

Quality controls (Internal & External) definition, methods, advantage

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Anatomy & Physiology

a) Musculo skeletal system: Bones:- types, structure and functions
b) Digestive System: Gross anatomy of digestive organs, Physiology of Digestion, Digestive juices – Secretion, Composition and functions
c) Respiratory System: Gross anatomy of respiratory organs, Physiology of respiration, Oxygen and Carbon dioxide transport
d) Cardiovascular System : Gross anatomy of heart and blood vessels
e) Excretory System: Gross anatomy of excretory organs, Function of Kidneys, mechanism of urine formation, Structure and function of Kidney
f) Reproductive System: Gross anatomy of Male & Female reproductive organs, Physiology of menstruation
g) Cerebro spinal fluid: Formation, composition of CSF
h) Endocrine System: Gross anatomy of endocrine organs: Brief description of Endocrine hormone and their functions

Biochemistry

a) Introduction and scope of Biochemistry, cleaning and care of laboratory glass ware and equipments, preparation and storage of Distilled water, Analytical balance, calorimeter, spectrophotometer, pH Meter, flame photometer, S.I. unitof measurement, Preservation and disposal of biological sample, Basic statistics –mean, median, modes, SD, CV, normal reference ranges. Acid and base, pH, buffer solution, indicator, standard solution, storage of chemicals, water, electrolytes, acid base balance
b) Carbohydrate, Lipids, Proteins – Classification, Properties, Biologicalimportance, functions. Amino acids, nucleic acids, Enzymes, Co-enzymes – Definition, classifications,Biological role/importance.
c) Glycolysis, TCA-cycle, Electron transport chain, Pentose Phosphate Pathway, Glyconeogenesis, Gluconeogenesis, Cori-cycle, Blood sugar and its regulation.
d) Fatty acid, cholesterol, lipoproteins, Purine ribonucleotide – Biosynthesis,utilization, Ketone bodies formation and its utilization.
e) Amino acids, vitamins, mineral – classification, Biological role, deficiency state.Transamination, Deamination, Biological importance of catecholamine, GABA,Serotonin, Histamine, Melanin.
f) Tumour markers: Brief history, classifications, clinical applications,
g) Laboratory test (AFP,CEA,PSA)
   - Liver function test, renal function test.
   - Thyroid function test, Enzymes and co-enzyme in diagnosis of the diseases,Hormone analysis.
   - Cardiac function test
   - Qualitative test for – Carbohydrates, lipids, proteins, Bence Jonce's Protein
   - Estimation of Serum electrolytes, and bicarbonates Blood sugar
   - Quantitative test for organic constituent (Urea, uric acid, creatinine) inorganicconstituent (sodium, Potassium, calcium, ammonia, chloride, Phosphate, bicarbonate and sulphate in urine with clinical significance and study of abnormal constituent or urine (glucose, Protein ketone bodies, blood, bile salt, bile pigments.
   - Radio Immuno Assay (RIA)
   - Enzyme Link Immuno sorbent Assay (ELISA)
   - Chromatography (thin layer paper, gas, liquid Electrophoresis, (gelelectrophoresis, liquid electrophoresis)

Microbiology

a) Introduction, brief history of Microbiology, origin of microbial life – theory ofspontaneous generation.

Safety measures in microbiology

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- Classifications and nomenclature of bacteria (five kingdom concept)
- Sterilization – Principle, methods, antiseptic, disinfectants.
- General characteristic of Bacteria, anatomy of bacteria (shape, size,components)
- Growth and nutrition of bacteria, classification of bacteria on the basis ofnutritional requirements, measurement of cell mass and factor affecting growth.
- Cultivation of microbes (Bacteria)
- Culture technique (media preparation and inoculation
- Isolation of Pure cultures (streak plate, spread plate, pours plate and serialdilution)
- Identification of microbes by colony morphology.

b) Bacteriology, Normal Micro flora of human body, Germ theory of diseases,microbial infection (types, sources and transmission)

- Bacterial toxin (Endotoxin & exotoxin)
- Bacterial morphology, isolation, identification, Pathogenicity, Lab diagnosis(Culture, Biochemical test, Hanging drop method for motility, Anaerobic, aerobic culture methods of staphylococcus, streptococcus, Neisseria Gonorrhea, N. meningitidis, Clostridium tetani & C. perfringens
- E.coli, Vibrio cholera, Salmonella typhi, Shigella, Mycobacterium /

  Mycobacterium tuberculosis, Spirochetes– Treponema pallidum.
- Collection, preservation, transportation of clinical specimens for microbialinvestigation.
- Bacteriological methods of examination of blood, faeces, pus, sputum, throatswab and urine
- Antibiotic sensitivity test (Disc diffusion and broth dilution methods)
- Hospital acquired infections and their control.
- Waste disposal and management

c) Instruments & Glass ware:

- Autoclave, Incubator, Laminar Airflow,
- Hot air oven, water bath, vortex shaker,
- Petri dish, test tube, screw cap tube, glass spreader/ L–rods, Pasteur pipettes.

d) Medical Mycology:

- Classification and nomenclature of fungi
- General characteristics, structures, reproduction, cultivation

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- Medically important Division of fungi
- Morphology, culture characteristics, Pathogenicity, Lab diagnosis of CommonPathogenic fungi, (Aspergillus Sp., Candida Sp., Cryptococcus Sp., Dermatophytes, Penicillium Sp.)

e) Immunology

- Introduction, Antigens (Types and properties) Antibodies/ Immuno globintypes and properties)
- Antigen – antibody reactions and their applications (Agglutination, precipitation, complement fixation and neutralization tests)
- Immunity (Innate & Acquired)
- Hypersensitivity
- Immunodeficiency diseases

f) Serology

- Quality control measures in serology
- Common serological technique and their applications (VDRL, Widal, RA test,ASO, Pregnancy test, Hbs Ag and HCV, HIV, mantoux test)

g) Medical Virology

- Classification, nomenclature, general characteristics (Morphology, chemical,biological properties and multiplication)
- Cultivation of viruses (chick embryo, cell culture and animals)
- Bacteriophages (lytic and lysogenic cycles)
- Morphology, cultural characteristics, Pathogenicity and Laboratory diagnosisof the following viruses
  - Poliomyelitis
  - Mumps
  - Measles
  - Hepatitis A,B,C
  - Cytomegalovirus
  - Rabies
  - HIV/AIDS

h) Molecular Biology

- Introduction
- DNA & RNA
- Isolation of DNA (Genomic & Plasmid)
- Plasmids (types and Importance)

i) Principles, methods and application of

- ELISA, Immunoflourescence test, Western Blot
- PCR

Parasitology

a) Introduction, classification, characteristics of human parasites

- Collection, storage and transportation of specimens, preservation of parasites

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- Morphology, transmission, life cycle, Pathogenicity and Lab. Diagnosis of :-

Entamoeba histolytica, Giadia Lamblia, Trichomonas vaginalis, Leishmaniadonovani and L. tropica. Plasmodia species, Toxoplasma gondii, nematodes– Intestinal flukes, Blood flukes, Lung flukes, Liver fluke.

b) Common vectors of human diseases (mosquito, flies, ticks and fleas)

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- Definition
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- Role of FNAC
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  - Mayers & South Gate Mucicarmine stain
  - Gram's stain
  - ZN stains

Quality controls (Internal & External) definition, methods, advantage

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BASIC SCIENCES

1. Anatomical and biochemical structures to explain the physiological functions of human body and factors, which may disturb these, and mechanism of such disturbances.
2. Various groups of micro-organisms of clinical importance.
3. Disinfection and sterilization for the prevention of diseases in the hospital and community.
4. Collect and handle specimens for various diagnostic tests.
5. Enumerate weights and measures and demonstrate skill in calculation of dosage and preparation of solutions.
6. Read and interpret prescriptions and care for drugs according to the regulations.
7. Describe various groups of drugs acting on different systems of the body.
8. Recognize the toxic symptoms related to common drugs and poisons.

2. NUTRITION AND DIETETICS

1. Various nutrients and their importance in the maintenance of health.
2. Plan diets suitable to socio-economic status for different age groups and physiological conditions.
3. Nutritional deficiencies and their prevention and management.
4. Plan therapeutic diets for various disease conditions.

3. PSYCHOLOGY, MENTAL HEALTH AND PSYCHIATRIC NURSING

1. Normal and deviations in behaviour among various age groups and their cause.
2. Explain the principles of psychology and its application in health and diseases.
3. Interpret behaviour of self and others.
4. Recognize deviations from normal behaviour and provide guidance and counselling.
5. Dynamics of patient's behaviour and its application in providing nursing care.
6. Communication and maintain interpersonal relations.
7. Therapies utilized in psychiatry and the various roles of nurses in psychiatric nursing.

4. FUNDAMENTALS OF NURSING

1. Describe nursing as a profession, its scope, etiquettes & ethics.
2. First aid treatments
3. Congenial and safe environment to the patient.
4. Carry out basic nursing procedures for the care of the patients with an understanding of the scientific principles involved.
5. Make observations and records.
6. Administer prescribed medications and carry out treatments.
7. Maintain records of patients and nursing care.

5. COMMUNITY HEALTH NURSING

1. Personal, environmental, social and cultural factors contributing to health of individual, family and community.
2. Methods of control of spread of diseases.
3. Needs for health education and evaluate the effect of the same to patients, families and community.
4. Prepare and use appropriate audio-visual aids for imparting health education.
5. Symptoms of social disorganization and social pathology.
6. Demonstrate skills in medico-social work.
7. Principles of health care to mothers and children and the services available for them in urban and rural communities.
8. Deviations from normal amongst mother and children and take necessary action in clinics, health centres and homes.
9. Educate the community about need and methods of family planning.
10. Demonstrate skill in community diagnosis and in delivery of community nursing services in accordance with the national health care system.

6. MEDICAL AND SURGICAL NURSING

1. Causes, pathophysiology, symptoms, treatment and prophylactic measures in common medical and surgical conditions affecting various systems of the body.
2. Provide patient centered nursing care to patients with common medical and surgical conditions affecting various systems of the body.
3. Prepare operation theatre for surgery and assist in operative procedures.
4. Identify common equipment used in operation theatre
5. Explain the anesthesia used, with their effects and dangers, and care for an anesthetized patient until such time as he recovers from the effect of anesthesia.
6. Recognize and provide first aid in case of common emergencies using the resuscitation equipment including intubation
7. Care for critically ill patients who required support for maintaining vital functions.
8. (viii) Provide first aid in case of disaster, emergency and accidents and demonstrate skill in transporting the casualties.
9. (ix) Organize casualty/emergency services.
10. (x) Explain infectious diseases, their transmission and barrier nursing in hospital and community.

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7. PEDIATRIC NURSING

1. Describe growth and development, nutritional and psychological needs of children at different age group.
2. Explain basic principles involved in pediatric nursing.
3. Provide nursing management to neonates and children with medical and surgical disorders.
4. Recognize emergencies in neonates and children and take appropriate first aid measures.
5. Manage normal newborn and low birth weight baby.
6. Describe various aspects of preventive pediatric nursing and be able to practice them while rendering nursing care in a hospital or community.

8. OBSTETRICAL NURSING

1. Anatomy and physiology of pregnancy, child-birth and puerperium.
2. Antenatal care to mothers.
3. Episiotomy and suture a first and second -degree tear.
4. Domiciliary services to mothers and children
5. Management of common obstetrical emergencies needing immediate treatment.
6. Family welfare advice.

9. PRINCIPLES OF ADMINISTRATION AND SUPERVISION, EDUCATION AND TRENDS IN NURSING

1. Principles of administration and its application to health administration at different levels.
2. Organizational pattern for nursing components of hospital and public health service.
3. Effective human relations to improve efficiency of the staff.
4. Principles of supervision and develop skill in supervisory techniques.
5. Trends in nursing and nursing education in India and abroad.
6. Nursing as a profession and the rights, responsibilities and adjustment in professional life.
7. Methods of teaching applicable to nursing.