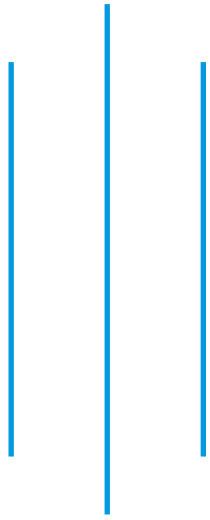
Syllabus For Licensing Examination of Bachelor of Science in Medical Imaging Technology

2021



Nepal Health Professional Council

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Table of Content

1. ANATOMY AND PHYSIOLOGY (20 MARKS)

1.1 INTRODUCTION

1.1.1 General anatomical terms
1.1.2 Human cell structure and function
1.1.3 The tissues: definition, types and function
1.1.4 Human physiology- definition
1.1.5 Body fluid compartments
1.1.6 Isotonic solution, hypertonic solution and hypotonic solution
1.1.7 Homeostasis, internal environment and feedback mechanism

1.2 MUSCULO-SKELETAL SYSTEM

1.2.1 Formation, growth and development of bones. Centre of ossification
1.2.2 Function of bone according to the size and shape of bone
1.2.3 Classification of bone
1.2.4 Classification of joints and their function
1.2.5 Different groups of muscle responsible for joint movement
1.2.6 Origin and insertion of major muscles, mechanism of skeletal muscle contraction
1.2.7 Concept of muscle tone, clonus, fatigue
1.2.8 Neuromuscular transmission
1.2.9 Radiological significance of major muscles e.g Psoas, diaphragm

1.3 NERVOUS SYSTEM

1.3.1 Neuron, nerve cells, Electrical properties of neuron
1.3.2 Central nervous system and brain
1.3.3 Parts of ventricles of the brain and their extent
1.3.4 The cerebrospinal fluid its formation and circulation
1.3.5 Midbrain and brain stem
1.3.6 Peripheral nervous system
1.3.7 Autonomic nervous system
1.3.8 Cranial nerves, spinal nerves
1.3.8 Synapse and synaptic transmission
1.3.9 Meninges and spaces around CNS

1.4 CARDIO-VASCULAR SYSTEM

1.4.1 Blood : composition and functions, Blood vessels- arteries, veins, and capillaries
1.4.2 Different parts of heart and its function
1.4.3 Cardiac cycle, Cardiac output, stroke volume
1.4.4 Systemic circulation
1.4.5 Pulmonary circulation
1.4.6 Coronary circulation
1.4.7 Aorta: formation, extent and tributaries
1.4.8 Inferior venacava (IVC) & Superior venacava (SVC)
1.4.8 Haemopoiesis
1.4.9 Blood groups-antigen and antibody
1.4.10 Clotting factors

1.5 THE LYMPHATIC SYSTEM

1.5.1 Lymphatic System
1.5.2 Lymph nodes : head, neck, axillary, thorax, abdomen, lower limb, inguinal
1.5.3 Spleen
1.5.4 Thymus gland
1.5.5 Lymph circulation and drainage
1.5.6 Hypersensitivity reactions

1.6 THE RESPIRATORY SYSTEM

1.6.1 Organs of the respiratory system, Paranasal sinuses and Respiratory passages (Nose, Pharynx, Larynx, Trachea, Bronchioles, Alveoli)
1.6.2 Lungs and Pleura and BPS segments
1.6.3 Respiration, Alveolar respiration
1.6.4 Mechanism of breathing and lung function test
1.6.5 Neural and chemical regulation of respiration
1.6.6 Ventilation and perfusion

1.7 THE DIGESTIVE SYSTEM

1.7.1 Organs of the digestive system, Mouth, Pharynx, Esophagus, Stomach, Small intestine, large intestine, rectum and anal canal Salivary glands,
1.7.2 Function of alimentary tract
1.7.3 Pancreas, Liver, biliary tract and their function
1.7.4 Metabolism of Carbohydrates, Protein and fat
1.7.5 Process of digestion and absorption of different types of food
1.7.6 GI hormones and their actions

1.8 THE URINARY SYSTEM

1.8.1 Organs of urinary system: Kidneys, ureters, bladder, and urethra
1.8.2 Kidneys-position, gross structure, cortex, medulla pelvis
1.8.3 Functional unit of kidney: nephron, function of kidneys
1.8.4 Formation of urine, water-electrolyte balances in body, etc.
1.8.5 Ureters: Position structure and function 1.8.6 Micturation-reflex control
1.8.7 Structure and function of the urinary bladder and urethra
1.8.8 Supra- renal glands, prostate gland.

1.9 THE REPRODUCTIVE SYSTEM

1.9.1 Female Reproductive System & Breast

1.9.1.1 External genitalia, Uterus, Ovaries, fallopian tube, vagina and supporting ligament of uterus: Position, structure and functions
1.9.1.2 Menstrual cycle, Reproduction& menopause
1.9.1.3 Breast-Position, structure and its functions
1.9.1.4 Puberty

1.9.2 Male Reproductive System:

1.9.2.1 Position, structure and functions of scrotum, testes, epididymis, deferent ducts, seminal vesicles, ejaculatory ducts and penis

1.9.2.2 Puberty

1.10 SPECIAL SENSES

1.10.1 Skin- structure and function

1.10.2 The ear (external, middle & internal ear)-structure and function

1.10.3 The Eyes- structure & functions.

1.10.4 Nose- structure and functions

1.10.5 Tongue-structure, functions,

1.10.6 Taste buds and Sense of taste

1.11 THE ENDOCRINE SYSTEM

1.11.1 Endocrine glands - Position, structure, functions and hormone secretion.

1.11.2 Endocrine glands - pituitary gland, thyroid gland, parathyroid glands, adrenal land, pineal gland, Pancreases, testis, ovaries, thymus etc.

1.11.3 Hypothalamus, positive and negative feedback mechanism

1.11.4 Hormones and their functions

2. BASIC HEALTH SCIENCE

2.1 PHARMACOLOGY

2.1.1 Define pharmacodynamics and pharmacokinetics.

2.1.2 Formulation and routes of drug administration.

2.1.3 Commonly used muscle relaxant and sedation in Radiology.

2.2 MICROBIOLOGY

2.2.1 Classify microorganism. Normal flora, Opportunists, Microbial immunology, Transient flora

2.2.2 Common disease caused by bacteria, virus, fungi and parasites.

2.2.3 Bacterial reproduction, metabolism, conjugation, transformation, staining, drug sensitivity testing.

2.2.4 Different types of flora, bacterial toxins.

2.2.5 Common sterilization methods.

2.3 PATHOLOGY

2.3.1 Cell injury and associated changes.

2.3.2 Types and causes of inflammation.

2.3.3 Define and describe types of embolism, thrombosis, ischemia and infarction.

2.3.4 Neoplasia, its type, spread and its predisposing factors.

2.3.5 Antigen, antibody and compliment.

2.3.6 Sign, symptoms and diagnosis of TB, AIDS, hepatitis.

2.3.7 Common serological tests- HBsAg, HIV, HBV, HCV

2.4 BIOCHEMISTRY

2.4.1 Define and classify carbohydrates, proteins and lipids.

2.4.2 Define and classify vitamins, disease associated with its deficiency.

2.4.3 Metabolism of glucose, amino acid, protein, calcium and phosphorous. Basic concept of tumor marker.
2.4.4 Enzyme, Biological oxidation, electron transport chain and oxidative phosphorylation. Concept of pH, buffer system of body.

1. RADIOGRAPHIC TECHNIQUE

1.1 UPPER LIMB

1.1.1 Basic technique for hand, fingers, thumb, wrist joint, Radio ulnar joints, humerus
1.1.2 Supplementary technique: carpal tunnel, scaphoid, ulnar groove, head of radius
1.1.3 Basic and supplementary views of elbow, humerus & Supra-condylar projection

1.2 SHOULDER GIRDLE AND THORAX

1.2.1 Technique for shoulder joint, acromio-clavicular joint, and scapula
1.2.2 Basic and supplementary views: projection to show recurrent dislocation of shoulder, infero-superior projection of clavicle, sterno- clavicular joint, sternum, ribs

1.3 LOWER LIMB

1.3.1 Technique for foot, toes, great toe, calcaneum, talo-calcaneal joint, ankle joint, lower leg with ankle joint, Femur, hip joint
1.3.2 Knee joint, patella, tibio-fibular joints,
1.3.3 Supplementary technique for torn ligaments, flat feet, axial view of calcaneum, skyline view of patella, intercondylar notch view

1.4 VERTEBRAL COLUMN

1.4.1 Technique for cranio-vertebral joint, atlanto-occipital joint, first three cervical vertebra, odontoid peg view
1.4.2 Cervical spine for intervertebral joints and foramina, Cervical spine in trauma patient, cervico-thoracic vertebrae,
1.4.3 Thoracic spine, thoraco-lumbar vertebrae
1.4.4 Lumber spine, intervertebral joints and foramina, lumbo-sacral joint, sacrum, coccyx
1.4.5 Supplementary techniques to demonstrate scoliosis, kyphosis, spondylolisthesis

1.5 PELVIC GIRDLE AND HIP REGION

1.5.1 Technique for whole pelvis, ileum, ischium and pubic bones,
1.5.2 Sacroiliac joints, symphysis pubis, hip joints, acetabulum, neck of femur
1.5.3 Supplementary projections: acetabulam view, judet view, Von-Rosen view and frog leg view for hip joint (CDH)

1.6 SKULL

1.6.1 Routine views of Skull, Towne's view, SMV, Emergency Skull radiography
1.6.2 Technique for mastoids, styloid process, IAM.
1.6.3 Routine views for facial bones, mandible, zygomatic arches, nasal bone, maxilla, temporo-mandibular joints,

1.6.4 Optic foramina, macroradiography for optic foramina
1.6.5 Routine and special views for Paranasal sinuses

1.7 DENTAL RADIOGRAPHY

1.7.1 Intra-oral and extra-oral projections, occlusal projection,
1.7.2 Orthopantomography (OPG)
1.7.3 Cepahaleometry

1.8 CHEST RADIOGRAPHY

1.8.1 Routine radiography of chest, High kV technique for chest.
1.8.2. Supplementry views: apicogram, lordotic and oblique views, lateral decubitus, diaphragmatic excursion double exposure technique.

1.9. PELVIMETRY

1.9.1 Consideration of radiation hazarad
1.9.2 Technique for evaluation of fetal maturity, abnormalities, position and multiplicity
1.9.3 Erect lateral projection and antero-posterior projection for CPD.

1.10 WARD AND OPERATION THEATRE RADIOGRAPHY

1.10.1 Knowledge of Electrical supply, radiation protection,
1.10.2 Radiography of bed-ridden patients
1.10.3 Radiography in operation theatre
1.10.2 Aseptic technique in O.T. Radiography

1.11 MAMMOGRAPHY

1.11.1 Soft tissue radiography
1.11.2 Basic and additional views of mammography
1.11.3 Spot compression, magnification technique

1.12 MACRO-RADIOGRAPHY

1.12.1 Definition, principle and its application
1.12.2 Magnification factors and uses of magnification radiography

2. SPECIAL RADIOLOGICAL PROCEDURES AND MODERN IMAGING TECHNIQUES

2.1 FIRST AIDS AND EMERGENCY CARE

2.1.1 Introduction to Shock, emergency treatment, Cardio-Pulmonary resuscitation (CPR)
2.1.2 Introduction to Hemorrhage, primary management of hemorrhage
2.1.3 sterilization: definition and types
2.1.4 Infectious patient in x-ray department: precautions
2.1.5 First aid measures in poisoning, frostbite, snake bite, heat stroke, rabid animal bite
2.1.6 Medical ethics and medico legal issues, breach of professional confidence and negligence

2.2 CONTRAST MEDIA

2.2.1 Introduction to contrast media (Different types of iodinated, barium, gadolinium and USG)
2.2.2 Definition, types (CT, MR, USG,GI contrast, Hepatobiliary etc….) and uses of contrast media
2.2.3 Properties of contrast media
2.2.4 Adverse effects of contrast media and their management
2.2.5 Emergency trolley setting
2.2.6 Lifesaving drugs and emergency trays.

2.3 ALIMENTARY TRACT

2.3.1 Definition, indications, contraindications, equipment required, contrast media, preparation of the patient, technique/procedure, filming & post procedure care for following investigations:
2.3.1.1 Barium swallow
2.3.1.2 Barium meal
2.3.1.3 Barium follow -through
2.3.1.4 Small bowel enema
2.3.1.5 Barium enema -single contrast, -double contrast
2.3.1.6 Loopogram

2.4 BILIARY TRACT

2.4.1 Definition, indications, contraindications, equipment required contrast media, preparation of the patient, technique / procedure, filming, post procedure care for following investigations:
2.4.1.1 Oral cholecystography
2.4.1.2 Intravenous choledochography (IVC)
2.4.1.3 Percutaneous transhepatic cholangiography (PTC),PTBD
2.4.1.4 Endoscopic retrograde cholangio-pancreatography (ERCP)
2.4.1.5 Per operative cholangiography (POC)
2.4.2.6 T-tube cholangiography

2.5 URINARY TRACT

2.5.1 Definition, Indication, contraindication, equipments required, contrast media, technique/procedure, filming, post procedure care for following investigations:
2.5.1.1 Intravenous urography (IVU), modification and additional techniques,
2.5.1.2Percutaneous renal puncture,
2.5.1.3 Percutaneous nephrostomy (PCN)
2.5.1.4Retrograde pyelography (RGU/RGP)
2.5.1.5 Micturating cysto-urethrography (MCUG)

2.6 REPRODUCTIVE SYSTEM

2.6.1 Definition, indication, contraindication, equipment required, contrast media, , technique/procedure, filming, post procedure care for following: Hysterosalpingography.

2.7 CARDIO-VASCULAR SYSTEM

2.7.1 Definition, indications, contraindications, equipment required, contrast media, preparation of the patient, technique/procedure, filming, post procedure care for following investigations:

- 2.7.1.1 Carotid angiography
- 2.7.1.2 Abdominal aortography
- 2.7.1.3 Portal venography
- 2.7.4.4 Peripheral and lower limb venography
- 2.7.4.5 Cath lab procedures.

2.8 MYELOGRAPHY

2.8.1 Definition, indications, contraindications, equipment required, contrast media, preparation of the patient, technique/procedure, filming, post procedure care for following investigations:

- 2.8.1.1 Lumbar, Thoracic and Cervical Myelogrphy
- 2.8.1.2 Post Myelo-CT (CT Myelography)
- 2.81.3 MR Myelography

2.9 ARTHROGRAPHY

2.9.1 Definition, indications, contraindications, equipment required, contrast media, preparation of the patient, technique/procedure, filming, post procedure care for following investigations:

- 2.9.1.1 Knee Arthrography
- 2.9.1.2 Hip Arthrography

2.10 SINOGRAPHY

2.10.1 Definition, indications, contraindications, equipment required, contrast media, preparation of the patient, technique /procedure, filming, post procedure care for Sinography

2.11 SIALOGRAPHY

211.1 Definition, indications, contraindications, equipment required, contrast media, preparation of the patient, technique/procedure, filming, post procedure care for following investigations:

- 2.11.1.1 Parotid sialography
- 2.11.1.2 Sub-mandibular sialography

2.12 DACROCYSTOGRAPHY

2.12.1 Definition, indications, contraindications, equipment, required, contrast media, preparation of the patient, technique/procedure, filming, post procedure care for dacrocystography.

2.13 INTERVENTIONAL TECHNIQUES

2.13.1 Definition, indications, contraindications, equipment required, contrast media, preparation of the patient, technique/procedure, filming, post procedure care for following investigations: percutaneous drainage procedures including drainage

of thoracic collection, abdominal and pelvic collection, intra-arterial treatment of neoplasm including infusion, embolization, chemoembolization techniques and their chemical application

2.13.2 medico legal consideration and consent

2.13 CT PROTOCOL

2.13.1 Definition, indications, contraindications, contrast media, preparation of thepatient, technique/procedure, post procedure care for the following investigations:

2.13.1.1 Plain and enhanced CT of Head, PNS, Orbit, Temporal bone, Neck, Chest, Abdomen, Pelvis and Sequences for Trauma

2.13.1.2 CT Angiography of Circle of Willis, Carotid, Aorta, Pulmonary, Renal, Coronary, eripheral organs.

2.13.1.3 HRCT Chest and Temporal bone, CT Portography, Cysternography, Myelography, Colonoscopy and CT guided Interventions.

2.14 MRI PROTOCOL

2.14.1 Definition, indications, contraindications, contrast media, preparation of thepatient, technique/procedure, post procedure care for the following investigations:

2.14.1.1 MR Brain, Orbit, Neck, PNS, Upper and Lower Extremities, Spine, Male and Female elvis.

2.14.1.2 MR Angiography of Cerebral, Carotid, Abdomen and Peripheral

2.14.1.3 MR Perfusion, Spectroscopy, Whole Body diffusion, Breast imaging, MRCP, Dynamic equences, FMRI, MR Arthrography.

2.15 ULTRASONOGRAHY

2.15.1 Identify common pathology in abdomen and pelvis (gall stone, renal stone, collection and abscess), ascites, pleural effusion, mass

2.15.2 Use of Doppler ultrasound in normal and pathological condition

2.16 NUCLEAR MEDICINE

2.16.1 Basics of Bone Scintigraphy, Renal Scintigraphy, Thyroid Scintigraphy, Brain Perfusion, Imaging Myocardial Perfusion, Imaging Hepato-biliary Scintigraphy, SPECT and Whole Body PET-CT

3. EQUIPMENT FOR DIAGNOSTIC IMAGING

3.1 X-RAY TUBES

3.1.1 Overview of production of x-rays, Historical background,

3.1.2 Components of an x-ray tube: Cathode assembly, Anode assembly

3.1.3 Stationary and rotating anodes

3.1.4 Line focus principle, anode heel effect, Off- focus radiation

3.1.5 Glass envelope, tube shielding, care of x-ray tubes,

3.1.6 X-ray tube faults,

3.1.7 Modification and recent advances in x-ray tube

3.2 RADIOGRAPHIC COUCHES, STANDS AND TUBE SUPPORTS

3.2.1 X-ray tube supports
3.2.2 Radiographic couches
3.2.3 Chest stands and vertical Bucky
3.2.4 Modern basic radiographic units

3.3 EXPOSURE TIMERS AND FACTORS

3.3.1 Introduction
3.3.2 Clockwork timer, synchronous motor and impulse timers,
3.3.3 Electronic timers,
3.3.4 Autotimers (photoelectric timer and ionization chamber timer)
3.3.5 Kilovoltage and milliampere second and their effect on radiographic image
3.3.6 Focal spot size
3.3.7 Source to object size, source to image receptor and programmed exposure factors

3.4 BEAM CENTERING & BEAM LIMITING DEVICES

3.4.1 Cones and cylinders, Aperture diaphragms,
3.4.2 Light beam diaphragms, Positive beam limitation

3.5 PORTABLE AND MOBILE RADIOGRAPHIC EQUIPMENTS

3.5.1 Main features of portable and mobile equipment
3.5.2 Mains dependent mobile equipment
3.5.3 Capacitor discharge equipment
3.5.4 Battery powered generators

3.6 CONTROL OF SCATTERED RADIATION

3.6.1 Significance of scattered radiation
3.6.2 Reduction in the amount of scatter radiation produced (field size, use of appropriate exposure factors, compression band)
3.6.3 Reduction in the amount of scatter radiation reaching to the film (metal backing of cassettes, filters, air-gap technique, cones and diaphragms, Grids)
3.6.4 Grid: construction, function, grid characteristics, grid types and patterns. Grid movement
3.6.5 Reduction in the effect of scatter (use of intensifying screens)

3.7 FLUOROSCOPIC EQUIPMENT

3.7.1 Introduction
3.7.2 Conventional fluoroscopy
3.7.3 Mobile and specialized fluoroscopic units.
3.7.4 Image intensified fluoroscopy,
3.7.5 Image intensifier- construction and working principle,
3.7.6 TV camera and TV monitor
3.7.7 DDF (Direct Digital Fluoroscopy)
3.7.7 Advancement in DF

3.8 TOMOGRAPHY

3.8.1 Introduction to Tomography

3.8.2 Main features of tomographic equipment,
3.8.3 Wide angle and narrow angle Tomography, Different types of tomographic vement,
3.8.4 Multi-section Tomography

3.9 EQUIPMENT FOR DENTAL RADIOGRAPHY

3.9.1 A simple dental radiographic unit
3.9.2 Orthopantomography (OPG)

3.10 VASCULAR IMAGING EQUIPMENT

3.10.1 Generators and x-ray tubes
3.10.2 C-Arm/U-Arm assembly
3.10.3Automatic film changers (roll and cut film changers)
3.10.4 Angiographic tables
3.10.5 Automatic pressure injectors
3.10.6 Program selector, cine cameras
3.10.7Digital subtraction Angiography (DSA)
3.10.8 Catheters, Guidewires for different procedures

3.11 MAMMOGRAPHIC EQUIPMENT

3.11.1 Introduction
3.11.2 Mammography x-ray tube, compression, grids, AEC
3.11.3 Image receptors in mammography
3.11.4 Apparatus for magnification radiography in mammography
3.11.5 Basics and application of digital mammography

3.12 DIGITAL IMAGING

3.12.1 Introduction to digital imaging concepts and advantages of image digitization,
3.12.2 Digital image structure
3.12.3 Digital radiography:
- 3.12.3.1 Scanned projection radiography (SPR)
- 3.12.3.2 Computed radiography (CR)
- 3.12.3.3 Direct digital radiography (DR)

3.12.4 Digital Mammography, Digital fluoroscopy and Digital subtraction angiography (DSA).
3.12.5 Teleradiology, Explain Picture archiving and communicating system (PACS), DICOM
3.12.6 Different types of printers (Dry view laser, Thermal ….etc)

3.13 COMPUTED TOMOGRAPHY (CT)

3.13.1 Introduction.
3.13.2 Basic principles of CT
3.13.3 Generations of CT
3.13.4 System components (CT Tube, Detectors etc.)
3.13.5 slip-ring technology and its principles, Image characteristics & Image quality in CT
3.13.6 Artefacts in CT
3.13.7 Dual-Energy CT
3.13.8 Recent advancement in MDCT and its components
3.13.9 Cone beam CT (CBCT), its principle and advantage in dental imaging.

3.14 MAGNECTIC RESONANCE IMAGING (MRI)

3.14.1 Fundamental concepts: magnetic moments, precession, resonance, nuclear magnetic resonance (NMR)
3.14.2 Introduction to MR Scanners: imaging magnets, RF transmitter and receiver coils, shim coils and gradient coils
3.14.3 Principle parameters of MRI: spin density, T1 relaxation time, T2 relaxation time
3.14.4 Basic principles of MR imaging and related parameters
3.14.5 Spin echo pulse, IR, Gradient Echo, Recent and fast pulse sequences used in MRI
3.14.6 MRA, MRV, MR Spectroscopy, Functional MRI, MR Perfusion, High-Field MR imaging (1.5T,3T…etc)
3.14.7 Artefacts in MR
3.14.8 MR safety
3.14.9 Biological effects of MRI, Recent advances in MR technology.

3.15 NUCLEAR MEDECINE

3.15.1 Positron Emission Tomography (PET): Physics, principle, instrumentation, recent advances, application
3.15.2 Gama camera/scintillation, Single Photon Emission Tomography (SPECT): hysics, instrumentation, application
3.15.3 Radioisotope generator, radiopharmaceuticals, radionuclides and radiation safety measure in nuclear medicine.
3.15.4 PET-CT, PET-MRI:principle, application and advantages.

4. RADIATION PHYSICS AND RADIATION PROTECTION

4.1 REVIEW OF ELECTRICITY

4.1.1 Electromagnetic induction and its laws,
4.1.2 Self and mutual induction,
4.1.3 A.C generator, Peak and effective values of AC
4.1.4 Concept of Reactance, Impedance & phase angle
4.1.5 Measurement of current and voltage, Voltmeter, ammeter and galvanometer
4.1.6 Faradays law, Lenz s law and Fleming s right hand rule,
4.1.7 Calculation of current and impedance in circuit containing L,C,R,LR,CR,LCR.

4.2 TRANSFORMER

4.2.1 Theory and laws of transformers, construction, Losses & Efficiency, Transformer ratings,
4.2.2 Filament transformer,
4.2.3 High-tension transformer,
4.2.4 Autotransformer or variac transformer

4.3 THERMIONIC EMISSION AND RECTIFIERS

4.3.1 Phenomenon of thermionic emission, Diode - construction, principle & characteristics
4.3.2 Rectifiers: Self-rectification, Half-wave, Full-wave (two valves and four valves) and constant voltage rectifiers.
4.3.3 Semiconductor: characteristics, Capacitor, Transistor and Photomultiplier

4.3.4 The cold cathode gas filled diode and its use

4.4 ATOMIC STRUCTURE AND ELECTROMAGNETIC RADIATION

4.4.1 Electron, Proton, Neutron, mass number and the atomic number
4.4.2 Isotopes, isomers and isobars
4.4.3 Electron shells and energy levels
4.4.4 Excitation and ionization
4.4.5 Emission of electromagnetic waves, spectra
4.4.6 Properties of electromagnetic waves
4.4.7 Concept of photon and quanta, Bohr's postulate, Rutherford Atomic model
4.4.8 Photoelectric effect and photocell

4.5 RADIOACTIVITY

4.5.1 Introduction.
4.5.2 Radioactive elements, radioactive disintegration
4.5.3 Properties of radioactive particles
4.5.4 Radioactive decay law, Half-life, mean life.
4.5.5 Artificial radioactivity: Radioactivity induced by neutron bombardment and proton bombardment.
4.5.6 Nuclear binding energy, nuclear stability
4.5.7 Alpha, beta and gamma disintegration
4.5.8 Introduction to fission and fusion.

4.6 X-RAYS

4.6.1 Historical background
4.6.2 X-ray tube,
4.6.3 Mechanism of x-ray production
4.6.4 Properties of x-rays, Intensity & quality of x-rays, continuous and characteristic spectra,
4.6.5 Effects of variation of tube current and voltage, Bragg's law for wavelength determination.
4.6.6 X-ray control and indicating equipment: simple circuit diagram as illustration of sequence from mains supply to exposure control.
4.6.7 Mains voltage circuit
4.6.8 Mains cables, Switches and fuses
4.6.9 Mains voltage compensation, earthing, insulation, Voltage drops in cables.
4.6.10 X-ray tube voltage control and indication,
4.6.11 Exposure controls. Contactors and timers
4.6.12 X-ray tube current control and filament supply, mA compensation, Generator regulation.

4.7 INTERACTION OF RADIATION WITH MATTER

4.7.1 Thompson scattering, Photoelectric interaction, Compton scattering, Pair production, photonuclear disintegration and their significance
4.7.2 Transmission of a homogenous and heterogeneous x-ray beam through matter
4.7.3 Effects of filtration

4.7.4 Relative amount of scatter from an x-ray beam during the passage through matter
4.7.5 Effects of collimation.

4.8 RADIATION DETECTION AND MEASUREMENT

4.8.1 Principle of measurement
4.8.2 Ionization chamber, Electrometer
4.8.3 Scintillation counter
4.8.4 Gieger-muller counter
4.8.5 Thimble ionisation chamber
4.8.6 Condenser chamber
4.8.7 Film badge, OSL, TLD, pocket dosimeter

4.9 RADIATION PROTECTION

4.9.1 Introduction.
4.9.2 Objective and principle of radiation protection
4.9.3 Radiation and Radiation units
4.9.4 Personnel monitoring
4.9.5 Protective materials
4.9.6 ICRP recommendations on dose limits and ICRP recommendation for protection and WHO guidelines for protection and National Recommendations (Guideline for Health Institutions Established Upgrade standard. 2070)
4.9.7 Cardinal principle
4.9.8 Radiation protection in Nuclear Medicine
4.9.8 Radiation protection aspects in fluroscopy, CT, Angiography and ward radiography

4.10 BIOLOGICAL EFFECTS OF RADIATION

4.10.1 Target theory, Law of Bergonie and tribondeau, BEIR concept
4.10.2 Radiation effect- direct (effect in DNA) and indirect (radiolysis of water), LET, RBE and OER
4.10.3 Stochastic effect of radiation- early effect and late effect, Deterministic effect of radiation- early and late effect

4.11 ULTRASOUND

4.11.1 Longitudinal waves
4.11.2 Principles of ultrasound, intensity, power and fields,
4.11.3 Transmission of ultrasound,
4.11.4 Velocity of ultrasound in different media,
4.11.5 Ultrasonic interactions, absorption and scattering mechanism in tissue, refraction and reflection of ultrasound,
4.11.6 Damping of ultrasound in media,
4.11.7 Doppler effect
4.11.8 Recent advances in USG equipment,
4.11.9 Basic and recent advances in USG procedures

4.12 BASIC PHOTOGRAPHY

4.12.1 Photographic effect, Density, Characteristics curve, Spectral sensitivity, Latitude,

average gradient, gamma

4.12.2 Latent image formation - Gurney mott'S theory and Mitchells theory.

4.12.3 x-ray films and intensifying screens

4.12.3.1 Historical background of film, construction, types (single emulsion and double emulsion), Other types of film for medical imaging

4.12.4 Image characteristics

4.12.4.1 Reflected, transmitted and emitted light images, Signal to noise ratio, contrast to noise ratio, Contrast, density, spatial resolution, Noise, geometric unsharpness, Modulation transfer function

4.12.5 Film processing

4.12.6 Storage and archiving of film

4.12.7 Design and construction of darkroom and X-ray room, CT and PET room, MRI room and other Nuclear Medicine imaging and other imaging modality.

4.13 QUALITY CONTROL AND QUALITY ASSURANCE

4.13.1 Image quality, factors affecting the image quality, quality criteria given by European and other national and international bodies.

4.13.2 Concepts of Quality Assurance (QA), practical aspects of QA equipment testing for acceptance and performance evaluation, rectification of faults, monitoring of performance, assessment of utility of quality assurance

4.13.2.1 Quality assurance tests ; Basic concepts of quality assurance, quality assurance programme using following tests : accuracy of timer using spinning top/electronic timer, check on kVp, accuracy of mAs, verification of collimator alignment and beam centre alignment ; integrity of tomographic equipment using tomographic phantom, estimation of focal spot size, check on tube output

4.13.2.2 Care and maintenance of diagnostic machines : General principles and preventive maintenance for routine – daily, weekly, monthly, quarterly, annually; care in use, special care of mobile equipment.

BIO-STATISTICS AND RESEARCH METHODOLOGY

1.1 Definition of biostatistics. Determination of frequency distribution, presentation of statistics data

1.1.1 Measures of Central tendency, Location, Dispersion

1.3 Concept of Probability, Laws of probability, Binomial Poisson & Normal distribution

1.1.2 Correlation, Pearson correlation coefficient and spearman's rank correlation coefficient

1.1.3 T- test, z test and chi square test, Sampling, Probability and non-probability sampling

1.2 Define research and identify types of research. Describe purpose of research, explain scope of research.

1.2.1 Discuss ethical considerations and scientific paper writing.

1.3 Define epidemiology, Discuss the aims of epidemiology, descriptive epidemiology (Co-relational Studies, Case Reports and Case Series, Cross- Sectional Surveys), Describe Analytical epidemiology (Observational studies, Case-control studies, Cohort studies, Intervention Studies -Experimental Studies)

HOSPITAL MANAGEMENT AND PATIENT CARE, CODE OF ETHICS AND HEALTH SYSTEM OF NEPAL

1.1 Describe the clinical responsibility, Legal responsibility, role of radiography technologist and the hospital, features of general patient care
- 1.1.1 Perform general preliminaries to the examination, moving chair and stretcher with patients, the anaesthetized patient
- 1.1.2 Describe hygiene in the x-ray department.

1.2 Handling the patient, emergency care and handling of seriously ill or injured patients
- 1.2.1 Basic life support, Patient transfer and body mechanics, handling patient with communicable disease
- 1.2.2 Role of technologist in the health care team, emergencies in a Radiology department and how to handle them.