DIPLOMA IN CT SCAN TECHNICIAN 1ST YEAR

GENERAL ANATOMY & PHYSIOLOGY

Scope of Anatomy and physiology.
Structure of cell, function of its components with special reference to mitochondria and microsomes.
Elementary tissues: Elementary tissues of the body, i.e. epithelial tissue, muscular tissue, connective tissue and nervous tissue.
Skeltal System: Structure and function of Skelton .
Composition of blood, functions of blood elements and Blood group.
Name and functions of lymph glands.
Cardiovascular System: Structure and functions of various parts of the heart .Arterial and venous system with special reference to the names and positions of main arteries and veins. Blood pressure and its recording.
Respiratory system: Various parts of respiratory system and their functions,
Urinary System: Various parts of urinary system and their functions,
structure and functions of kidney.
Central Nervous System: Various parts of central nervous system, brain and its parts, functions .
Anatomy and physiology of automatic nervous system.
Sensory Organs: Elementary knowledge of structure and functions of the organs of taste, ear, eye and skin.
Digestive System: names of various parts of digestive system and their functions. structure and functions of liver.
Endocrine System: Endocrine glands and Hormones. Their hormones and functions. pituitary, thyroid. Adrenal and pancreas
Reproductive system: Physiology and Anatomy of Reproductive system.

ONLY BASICS OF REVELATION PATHOLOGY, PHARMACOLOGY & MICROBIOLOGY & DRUG USED DURING CT SCAN

Inflammation and repair
Wounds, ulcers, sinuses
Bones:-fracture, types of fractures, healing of fractures, factors affecting the healing of fractures, delayed union, common fractures of upper and lower extremity, methods of fixation, complications.
Joints:-dislocation of the major joints of upper and lower extremities-displacement, fixation, complications, internal derangement of knee, sacroiliac strain, Synovitis, acute and chronic Osteo-Arthritis, Rheumatoid Arthritis
Muscles-sprain, wounds, rupture, scars, burns, amputations, fibrositis, Myalgia, Myositis
Nerves-inflammation and repair, degeneration, lesions of upper motor neuron,hemiplegia, paraplegia, lesions of lower motor neutron-acute anterior polio myelitis,facial palsy, neuritis, neuralgia.
Deformities of upper and lower extremities, Sprengel shoulder, Dupuytren's Contracture, Genu Valgum, Genu Varum, Flat foot, Metatarsalgia

Drug Pharmaco-kinetics, Pharmacology-adverse reaction, factors modifying drug effects
Drug Activity of CNS : Introduction, Alcohols, Sedatives & Hypnotics, Anti-consultants.
Drugs acting on peripheral nervous system: Adrenergic, Cholinergic.
Drug therapy in Parkinsonism
Skeletal muscle relaxants
Vitamin D, Calcium, Phosphorus, Magnesium.
Analgesics & Drugs used in Gout & Rheumatoid Arthritis
Psycho Therapeutics
General anesthetic, Local anesthetic
Characteristics of bacteria, virus , fungus
Sources of infection.
Mode of spread.
Destructionof bacteria.
Control of infection.
Inflammation, healing and repair
Infection, wounds, ulcers, blisters, boils, fractures, burns, scalds, gangrene and haemorrhage

RADIATION, RADIOLOGY POSITION & RADIOLOGY HAZARDS

Cancer Statistics- worldwide & India
Cancer Registries & National Cancer Control Programme
Analysis of data in cancer registries
Regional Cancer Centers
Cancer Screening & Prevention
Patient Care
Assessment & referral systems for radiotherapy
Care & evaluation during & after treatment
Emergencies in Oncology
Radiotherapeutic Management of different malignancies
Radiotherapy for non malignant conditions
Treatment Response & Result
Guidelines for treatment response assessment
Complete Response, Partial Response, No response, Stable disease.
Treatment related morbidity assessment
Radiation morbidity (early & late)
Morbidities of combined treatment
Grading of morbidity
Radiation Dose.Radiation Hazards Protection, Dark Room
Positioning, Scaphoid PA & Olique, Elbow & shoulder joint, Foot AP & oblique, Knee joint AP,Pelvis AP, ChestAP, PA & Lat, Sub Mento vertical PNS , skull and townes. Abdomen Erect.

HAND HYGIENE & PREVENTION OF CROSS INFELATION BLS.CPR

Introduction
Materials & methods
Discussion
Conclusion
Hand hygine involves behavioural changes
Incorporation of hand hygiene in examination checklist of OSCE stations

DIPLOMA IN CT SCAN TECHNICIAN 2nd YEAR

ANATOMY & RADIOLOGICAL ANATOMY

Introduction to Anatomy
Introduction to Physiology
Human body
Anatomical Posture
Descriptive Terms in Anatomy
Planes of body
Cells, Tissues, System, Membranes
Glands-incl endocrine, salivary
Body fluids –csf, lymph, blood etc
Myology –muscles of face,thorax,abdomen, limbs
Bones and muscles of body-
Lymphatic system
Skeletal system with Function of Skeleton
Classification of bones
Descriptive terms used in osteology
Joints of Skeleton
Bones of Appendicular Skeleton/ limbs
Vertebrae
Sacrum and coccyx
Pelvic bones and muscles
Sternum and ribs
Bones of orbit
Temporal bone
Bones of skull
sutures of skull
Paranasal sinuses & face
Abdominal regions
Solid and visceral organs of abdomen
Hepatobiliary system
Excretory organs
Digestive system

Mesentery and bowel
The urinary system-KUB
Mediastinum
Heart and aorta
Neck and larynx
Respiratory System incl pleura, brochioleslung lobes & segment
Reproductive System
Nervous System with focus on brain, cord Meninges, ventricles,gray/white matter
Organs of special senses—tongue, nose, eye, ear

PATIENT PREPARATION & POSITING

C.T Brain
C.T. Neck
C.T. P.N.S
C.T. Thorax
C.T. Abdomen
C.T. Scan of Spine
C.T. limbs
C.T. Orbit
HRCT-----Temporal bone/ lungs
D RECON WITH MPRANGIOGRAPHY CARDIAC& MULTISLICE CT

PATHOLOGIES AS SEEN ON C.T

Cranio Cerebral & body Trauma
Epidural / Subdural Haematoma
Subarachnoid Haemorrhage
Congenital brain lesions
Hydrocephalus
Stroke,Cerebral Infarction.
OVERVIEW OF Brain Tumours
COMMON Body Tumours----BENIGN & MALIGNANT
Pneumonia/pneumothorax/ pleural effusion
ASCITIS/ peritoneal collection
Liver abscess/ parietal abscess
Tuberculosis—lung / bone /genito urinary/ Brain/ pleura /GITCarcinomas----------
Hepatocellular carcinoma/,renal cell / bronhogenic,Gall bladder/ pancreatic head/ ub mass
Renal Cyst , Polycystic Disease.
Ring lesions in brain
COMMON Abdominal & Pelvic masses (inflammatory and malignant)
COMMON Vascular lesions

C.T/RECENT ADVANCES/ PERFUSION CT/ PHYSICS

C.T.Myelogram /cisternogram
CT Guided FNAC / biopsy
Other Special C.T. Procedures & common interventions
C.T Enteroclysis/ CT IVP/ dual phase CT
CT ANGIOGRAPHY----mainly brain PET CT
PERFUSION CT05MULTISLICE CT/ MDCT
CARDIAC CT Basic Principles of C.T Scan, Discovery of C.T Scan
Scanner Geometry:-1stGeneration, IInd Generation, III Generation, Vth Generation
Collimators, Artifacts, C.T Number, Attenuation values, (H. U) Image Reconstruction Algorithm.
System Components of Helical or spiral C.T. Scan, Gray Scale, MIP, MPR, VRT, Angiography.
Cardiac C.T /64/128 Slice C.T/ MDCT
Pitch / 3DCT Reconstruction / SSD/ PET CT