

VEER NARMAD SOUTH GUJARAT UNIVERSITY, SURAT

DMRD

(Radio diagnosis)

Physics Related to Radiology and Imaging

(A) X-Ray :-

Production & General properties
X-Ray tube
X-Ray Production – X-Ray Circuits
X-Ray Generators
Measurement of quantity & quality of X-Rays.
Absorption & Scattering
Characteristic X-Ray & filtration.
Use of dosi meter.

(B) Principles & Working :

- CT
- MRI
- Ultrasound & Colour Doppler

(C) Photography :

- Theory of photographic action & image formation.
- Developing & fixing techniques
- Dark room

(D) Protection against Radioactive rays

(E) Radioactivity :

Radioactive transformation.
Laws of radioactive decay.
Alpha, Beta & Gamma rays.
Absorption co-efficient & half – value layer.
Isotopes and their medical uses.

(F) Contrast Media : Types, uses, adverse reactions & their management.

Respiratory System :

- 1) Radiological anatomy of normal chest.
- 2) Methods of Examination.
- 3) Paediatric chest – congenital anomalies
- 4) Diaphragmatic & Pleural diseases
- 5) Pulmonary infections
- 6) Interstitial lung diseases
- 7) Tumors of lung
- 8) Mediastinal lesions
- 9) Chest trauma

Cardiovascular System :

- 1) Normal appearance & anatomy
- 2) Radiology of pulmonary circulation.
- 3) Pericardium
- 4) Acquired heart diseases
- 5) Congenital heart diseases

Gastrointestinal & Biliary Systems

- 1) Acute Abdomen
- 2) Salivary gland, esophagus
- 3) Upper GI – Stomach, duodenum & small bowel diseases
- 4) Lower GI – Colonic diseases.
- 5) Biliary tract, Liver, Pancreas, Splenic diseases.

Urogenital Systems :

- 1) Methods of examination of urinary tract.
- 2) Urinary tract infections
- 3) Calculi of kidney, ureter & bladder.
- 4) Tumors
- 5) Lesions of bladder & Prostate.
- 6) Urogenital tract diseases related to obst. & Gynaec.
- 7) Adrenal gland diseases

Central Nervous System :

- 1) Anatomy of normal & abnormal skull
- 2) Myelography
- 3) Head trauma
- 4) Brain tumors
- 5) Stroke
- 6) Diseases of spine – infective, degenerative, tumors.

ENT :

- 1) Pharynx and Larynx
- 2) Para – nasal sinuses

Eye & Orbit :

- 1) Trauma
- 2) Tumors

Bones & Joints :

- 1) Congenital Skeletal diseases
- 2) Skeletal trauma
- 3) Infective diseases
- 4) Tumors & tumor like lesions
- 5) Haemopoietic diseases & Metabolic disorders
- 6) Diseases of joints

Angiography :

Related to all systems of body

Doppler Study :

Vascular & fetal

Recent Advances in Radiology