

PAPER 1st Theory	Topics	Hours.
1.Details of Only relevant surgical & medical conditions.	1. History taking. General examination of the patient. Filling Case-sheet. Common clinical words.	15 Hrs
	2. Hypertension:- Def, Causes, Pathology, Clinical lectures, Investigation & Management.	05 Hrs
	3. Hypotension :- Def, Causes, Pathology, Clinical lectures, Investigation & Management.	05 Hrs
	4. Diabetes mellitus :- Def, Causes, Pathology, Clinical lectures, Investigation & Management.	10 Hrs
	5. <u>Diseases of blood</u> :- Anaemia, Basics of coagulation Bleeding disorders & Haemophilia.	20 Hrs
	6. <u>Respiratory Tract</u> :- Pneumonia, Tuberculosis, B.asthma, COPD, Bronchiectasis, Collapse of lung, Pneumonitis, Pleural effusion, Pneumothorax, Empyema thoracis, Cancer lung.	40 Hrs
	7. <u>Diseases of GIT & Liver & GB</u> :-Reflux Oesophagitis, Peptic ulcers, Gastritis, Intestinal Obstruction, Hepatitis, Cirrhosis of liver, Cholecystitis, Common mass in abdomen.	50 Hrs
	8. <u>Diseases of Nervous system</u> :- Stroke, Meningo-encephalitis, Glasgow coma scale, Epilepsy etc.	25 Hrs
	9. Basic idea about fractures & their general management.	25 Hrs
	10. <u>Head injury</u> :- SCALP injury, skull fracture, intracranial bleeds, concussion, contusion etc.	20 Hrs
	11. Out line of thoracic injury.	10 Hrs
	12. Out line of abdominal injury.	10 Hrs
	13. PIVD & other spinal diseases.	10 Hrs
	14. Spina bifida, Meningocele, meningo-myelocele.	10 Hrs
	15. Hydrocephalus:- Def,Causes, Types, S/S, Management.	20 Hrs
	16. Brain tumors, tuberculoma & Neurocysticercosis.	20 Hrs

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1. Details of Only relevant surgical & medical conditions.	17. <u>Diseases of Urinary tract:-</u> Urolithiasis, Benign prostatic hyperplasia.	15 Hrs
	18. <u>Endocrine system :-</u> Diabetes mellitus, hypo & Hyper thyroidism.	10 Hrs
	19. <u>Miscellaneous:-</u> Hypo & Hyper Natraemia, Hypo & Hyper Kalaemia, Hypo & Hyper Calcaemia.	05 Hrs
	20. <u>Infections diseases :-</u> TB, Typhoid, Malaria, Dengue fever, Leprosy, AIDS, Amoebiasis.	10 Hrs

PAPER 1st Theory	Topics	Hours.
2. Nursing Procedures like vital recording, IM/IV/SC injection, Oxygen therapy, Nebulization, IV infusion	1. Temperature monitoring & Fever.	02 Hrs
	2. Pulse monitoring.	02 Hrs
	3. BP monitoring.	02 Hrs
	4. Respiration monitoring.	01 Hrs
	5. Types of Injection routes.	01 Hrs
	6. IM Injection.	01 Hrs
	7. IV Injection.	01 Hrs
	8. SC Injection.	01 Hrs
	9. Oxygen Therapy.	03 Hrs
	10. Nebulization	03 Hrs
	11. IV Infusion (Also with infusion pump).	01 Hrs
	12. Care of Unconscious patient.	02 Hrs

PAPER 2nd Theory	Topics	Hours.
1.MRI physics, MRI positioning, Various MRI techniques & Radiation Hazards.	1.MRI SAFETY-Do's & Don't of MRI,Indications and Contraindication of MRI,Ionic and non ionic contrast,Negative and positive contrast Routes of contrast (IV, oral, rectal, vaginal),Contrast reaction and its management.	20 Hrs
	2.RADIATION-Radiation Hazards,Radiation Protection.	10 Hrs
	3.BASICS, PHYSICS AND CONCEPTS OF MR-Magnetisation Properties,Types of Magnetic characteristics of the Nucleus, Nuclear Magnetic properties of the elements.	20 Hrs
	4.Larmor Equation, Geometric Orientation,Resonance and excitation,Free induction decay: T2 Relaxation,Return of Equilibrium : T1 Relaxation,Comparison of T1 and T2,Angiography and magnetization transfer contrast,Time of flight (TOF).	30 Hrs
	5.CONCEPTS- Spin Echo, Fast Spin Echo, Parts of MRI Machine.	10 Hrs
	6.Artifacts, Machine dependent artifacts, Motion artifacts, Motion artifacts, Chemical shift artifacts,	10 Hrs
	7.Magnet, Resistive magnet, Superconductive magnet, Permanent Magnet	10 Hrs
	8.Safety and Bio-effects. Pulse sequences	10 Hrs
	9.Time of repetition and partial saturation- (i) T1 Weighting (ii) Spin (proton density) weighting (iii) T2 weighting (iv) Inversion recovery (v) Short tau inversion recovery (STIR) (vi) Fluid attenuated Inversion recovery (FLAIR)	20 Hrs
	10 .Gradient recall echo (GRE),Perfusion weighted MRI Diffusion weighted MRI, MR Spectroscopy, MR Tractography/Diffusion Tensor Imaging.	20 Hrs

Diploma in M.R.I. Technician

PAPER 2nd Theory	Topics	Hours.
1. MRI physics, MRI positioning, Various MRI techniques & Radiation Hazards.	11. Concepts of Radiographic Positioning.	05 Hrs
	12. Scaphoid & hand.	05 Hrs
	13. Elbow & shoulder joint.	05 Hrs
	14. Foot AP & oblique.	05 Hrs
	15. Hip & Knee joint AP.	05 Hrs
	16. Pelvis AP.	05 Hrs
	17. Chest AP, PA & Lat.	05 Hrs
	18. Sub Mento vertical & PNS.	05 Hrs
	19. Skull and Towne's.	05 Hrs
	20. Abdomen Erect.	05 Hrs
	21. BARIUM Studies.	05 Hrs
	22. IVP.	05 Hrs
	23. MCU/RGU/ T tube cholangiogram/ HSG.	05 Hrs
	24. Sinogram.	05 Hrs
	25. Contrast-Media, Radiographic Contrast, Density, Detail.	05 Hrs
	26. Types of film, Cassette, Intensifying Screen.	05 Hrs
	27. Safe Light, Developer and Fixer, Manual Processing.	05 Hrs
	28. Causes of film fog, Factors of X-Ray.	05 Hrs

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PAPER 2nd Theory	Topics	Hours.
	MRI PROCEDURES	
	1. MRI Myelogram /cisternogram.	05 Hrs
	2. MRI Guided FNAC / biopsy.	05 Hrs
	3. Other Special MRI Procedures & common interventions.	30 Hrs
	4. MRI Angiography, mainly brain.	10 Hrs

PAPER 2nd Theory	Topics	Hours.
3. Bio-medical physics of MRI Scan machine & development of MRI film etc.	1. Basic Bio-medical physics of MRI Scan machine.	80 Hrs
	2. Types of film, cassette, screen, Developer, fixer etc.	30 Hrs

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for
Practical :- Second Year
Diploma in M.R.I. Technician

Practical	Topics
	<u>Hands on training of :-</u>
	1. Preparation of patient for MRI Scan.
	2. Performing all types of MRI Scan.
	3. Contrast administration & management of adverse reactions to it.
	4. Protection from radiation hazards.
	5. Assisting MRI guided procedures.
	6. Developing film.
	7. Record keeping.