

SRI DEVARAJ URS ACADEMY OF HIGHER EDUCATION & RESEARCH
(A DEEMED TO BE UNIVERSITY)

B.Sc. Allied Health Sciences Third Year Semester-VI
July/August 2019 Examination

B.Sc. Imaging Technology

Time : 2.30 Hrs.

[Max. Marks : 80]

Paper-I
MRI Physics and Instrumentation
Q.P Code: J6440

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

LONG ESSAY

2 × 10 = 20 Marks

- 1 Describe Radio frequency pulses and proton resonance.
- 2 Explain the process of 2D and 3D image production.

SHORT ESSAY (Answer any six)

6 × 5 = 30 Marks

- 3 Describe magnetization.
- 4 Explain types of magnets used in MRI.
- 5 Explain T2 weighted images.
- 6 Write about magnet and shim coils?
- 7 Write about spinning proton?
- 8 Write about free induction?
- 9 Name the coils used in MRI and Explain any two.
- 10 Write about fringe field in MRI?

SHORT ANSWERS (Answer any Ten)

10 × 3 = 30 Marks

- 11 What is pulse sequence?
- 12 History of MRI.
- 13 What is T1 relaxation?
- 14 Explain Larmor frequency.
- 15 What is gradient coil?
- 16 What are types of magnets?
- 17 Name the types of MRI sequences.
- 18 What is paramagnetism?
- 19 What is NMR?
- 20 Difference between T1 and T2 images?
- 21 What is free induction decay?
- 22 What is superparamagnetism?

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Paper-II

MRI Imaging basics and advances in MRI

Q.P Code: J6450

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Draw neat labeled diagrams wherever necessary.

LONG ESSAY

2 × 10 = 20 Marks

- 1 What are the contrast agents used in MR angiography? Describe briefly about contrast MR angiography?
- 2 What is MR perfusion? Describe about arterial spin labelling?

SHORT ESSAY (Answer any six)

6 × 5 = 30 Marks

- 3 Describe briefly about mammography instrumentation?
- 4 What is TOF and its uses?
- 5 Describe about proton density imaging?
- 6 What are the uses of MR spectroscopy?
- 7 What are the views in mammography?
- 8 What are the indications for MRI brain?
- 9 Write briefly about T1 weighted MR sequence?
- 10 Describe briefly about STIR sequence?

SHORT ANSWERS (Answer any Ten)

10 × 3 = 30 Marks

- 11 What is B value?
- 12 What is flip angle?
- 13 What is cerebral blood volume?
- 14 What is para magnetism?
- 15 What are the substances will show T1 hyperintense se signal?
- 16 What is TR?
- 17 Complications of MR contrast agents?
- 18 What is super magnetism?
- 19 What is T2 shine through?
- 20 What if TE?
- 21 Indications for MR perfusion study?
- 22 What is NAA?

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Paper-III
Interventional Radiological procedures
Q.P Code: J6460

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

LONG ESSAY

2 × 10 = 20 Marks

- 1 Explain Venography of lower limb and upper limb.
- 2 What is retrograde pyelo urethrography. Explain the procedure.

SHORT ESSAY(Answer any six)

6 × 5 = 30 Marks

- 3 What is thermography.
- 4 Duplication radiography.
- 5 What is multiple radiography.
- 6 Digital subtraction angiography.
- 7 High kilo voltage technique.
- 8 Choledochiography post operative procedure.
- 9 Macro radiography.
- 10 Mobile radiography.

SHORT ANSWERS (Answer any Ten)

10 × 3 = 30 Marks

- 11 Forensic radiography.
- 12 Domiciliary radiography.
- 13 Soft tissue radiography.
- 14 Jugular venography.
- 15 Percutaneous renal puncture.
- 16 What is venography.
- 17 What is subtraction radiography.
- 18 What is theatre radiography.
- 19 Pre operative procedure of choledochiography.
- 20 Uses of thermography.
- 21 Indications of percutaneous nephrostomy.
- 22 Types of foreign body localisation.

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