

BACHELOR OF SCIENCE (RADIOLOGY & IMAGING TECHNOLOGY) (CBCS-2019 COURSE)
B.Sc. (R&IM) Sem-V : WINTER :- 2021
SUBJECT: BASIC MRI-I

Day : Monday
Date 7/2/2022

W-22536-2021

Time : 10:00 AM-12:00 PM
Max. Marks:

N.B.:

- 1) There are **THREE** sections as
Section – A = Objective Type Questions = 20 marks.
Section – B = Long Answer Questions = 20 marks.
Section – C = Short Answer Questions = 20 marks.
- 2) Section A is given in **SEPARATE** sheet and has to be answered on same test.
- 3) Section B has four long questions and **ANY TWO** questions have to be answered.
- 4) Section C has six short questions and **ANY FOUR** questions have to be answered.
- 5) You have to make such kind of mark in the box of the appropriate answers.

Seat No. _____

SECTION – A

M.C.Q's

1. First MR Machine was invented by:
 - a) Roentgen and Curie
 - b) Mansfield and Lauterbur
 - c) Hounsfield and Edison
 - d) None
2. Which of these is not a gradient used in MRI?
 - a) Slice-selection
 - b) Phase-selection
 - c) Phase-encoding
 - d) Frequency-encoding
3. MRCP stands for:
 - a) Magnetic Repeated Cholangio-pancreaticography
 - b) Magnetic Resonance Cholangio-pancreaticography
 - c) Magnetic Resistance Cholangio-pancreaticography
 - d) Magnetic Real-time Cholangio-pancreaticography
4. Edge of K-space contains:
 - a) Low spatial frequency information
 - b) High spatial frequency information
 - c) Both of the above
 - d) None

P.T.O.

5. Smallest unit of digital image is:
- a) Pixel
 - b) Voxel
 - c) Slice
 - d) None
6. Centre of K-space contains:
- a) Low spatial frequency information
 - b) High spatial frequency information
 - c) Both of the above
 - d) None
7. The time interval between start of one RF pulse and start of another RF pulse is:
- a) TR
 - b) TE
 - c) TI
 - d) FID
8. The time interval between start of RF pulse and reception of the signal is:
- a) TR
 - b) TE
 - c) TI
 - d) FID
9. Full form of FID is:
- a) Free Induction Delay
 - b) Free Incidence Decay
 - c) Free Induction Decay
 - d) Free Incidence Delay
10. Head coil in MR is which type of coil?
- a) Surface
 - b) Volume
 - c) Phase-array
 - d) None

Total Marks Obtained _____

Signature of Invigilator

Signature of Examiner

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SUBJECT: BASIC MRI-I

Day : Monday
Date 7/2/2022

W-22536-2021

Time : 10:00 AM-12:00 PM
Max. Marks: 60

N.B.:

- 1) There are **THREE** sections as
Section – A = Objective Type Questions = 20 marks.
Section – B = Long Answer Questions = 20 marks.
Section – C = Short Answer Questions = 20 marks.
 - 2) Section B has four long questions attempt **ANY TWO** questions have to be answered.
 - 3) Section C has six short questions and attempt **ANY FOUR** questions have to be answered.
 - 4) Answers to both the sections should be written in **SAME** answer book.
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SECTION – B

Long Answer (Attempt **ANY TWO**): [10 × 2 = 20]

- Q.1 Write in detail about image quality determinants.
- Q.2 Write in detail about MRI artefacts.
- Q.3 Write in detail about Radio-frequency coils.
- Q.4 How do you acquire MRI shoulder study? Mention indications, contraindications and sequences taken and basics of sequence planning.

SECTION – C

Short Answer (Attempt **ANY FOUR**): [5 × 4 = 20]

- Q.5 Write in short about different zones in MRI in terms of MR-safety.
- Q.6 Mention general contra-indications to performing MRI.
- Q.7 Write about advantages and disadvantages of spin-echo sequence.
- Q.8 Write in short about STIR sequence.
- Q.9 What are the different sequences taken in MRI Brain-epilepsy protocol?
- Q.10 Write in detail about patient preparation before performing MRI study.

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