

**BACHELOR OF SCIENCE (RADIOLOGY & IMAGING TECHNOLOGY) (CBCS-2019 COURSE)**

**B.Sc. (R&IM) Sem III : WINTER :- 2021  
SUBJECT: EQUIPMENTS IN RADIOLOGY**

**Day : Wednesday  
Date 16-02-2022**

**W-22511-2021**

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

**N.B.**

- 1) There are **THREE** section 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 on **SEPARATE** sheet and has to be answered on **SAME** sheet. This sheet should be completed within **first 20 minutes** of starting of the examination. The sheet with **section A** will be collected by Supervisor at the end of 20 minutes.
- 3) You have to make  such kind of mark in the box of the appropriate answers.

Seat No. : \_\_\_\_\_

**SECTION – A**

**M.CQ.'s**

**(20)**

**Q.1** MRI is considered superior to CT for

- Contrast studies
- Calcification of structures
- Body structures
- Soft tissue discrimination

**Q.2** Image contrast can be achieved by

- Selecting appropriate voxel, pixel and matrix
- Reconstruction of the CT image
- Leveling and windowing the CT image
- Selecting the Hounsfield number

**Q.3** Field of view refers to

- The size of the pixel
- A matrix
- The diameter of the image reconstructed
- The volume of a voxel

**Q.4** Hounsfield numbers in a CT scanner range from

- 1 to 100
- 100 to + 500
- 1000 to + 3000
- 0 to 1000

**PTO**

**Q.5** Which of the organs has lowest Hounsfield unit?

- Fat
- Lungs
- Water
- Muscle

**Q.6** In a T1 weighted image dark colour represents

- Water
- Edema
- Calcium
- All of the above

**Q.7** In a normal case air is seen dark in

- T1 weighted MRI
- T2 weighted MRI
- CT image
- All of the above

**Q.8** Computed tomography was invented by

- Godfrey Hounsfield
- Allan Cormack
- Wilhelm Conrad Roentgen
- None of the above

**Q.9** Mathematics of reconstruction was invented by

- Godfrey Hounsfield
- Allan Cormack
- Wilhelm Conrad Roentgen
- None of the above

**Q.10** Contrast resolution in CT is

- Better than conventional film
- Less than conventional film
- Same as in conventional film
- None of the above

Total Marks obtained : \_\_\_\_\_

Signature of Invigilator

Signature of Examiner

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- 1) There are **THREE** section 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 answer questions and **ANY TWO** questions have to be answered.
- 3) Section C has six short answer questions and **ANY FIVE** questions have to be answered.
- 4) Section B and C should be written in **SAME** answer sheet.

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**SECTION – B**

**Long answer questions (attempt ANY TWO)**

**(20)**

- 1) Describe the construction and function of Image Intensifier.
- 2) Describe the high tension circuit of the X-Ray machine.
- 3) Briefly describe Barium meal double contrast study.
- 4) Briefly discuss on rare earth elements, phosphorescence and fluorescence.

**SECTION – C**

**Short answer questions (attempt ANY FOUR)**

**(20)**

- 1) What are transformers? What are their types?
- 2) What do you understand from Barium meal follow through?
- 3) Discuss X-Ray generator.
- 4) What are grids? Enumerate the types.
- 5) Intravenous urography.
- 6) Fluoroscopy.

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