



BRAINWARE UNIVERSITY

Term End Examination 2025-2026

Programme – B.Sc.(MRIT)-2022/B.Sc.(MRIT)-2023/B.Sc.(MRIT)-2024

Course Name – Radiographic Techniques of CT Including Image Interpretation

Course Code - BMRITC403

(Semester IV)

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

- (i) Enumerate NCCT stand for in brain imaging.
 - a) Non-Contrast Computed Tomography
 - b) Neurological Contrast Computed Tomography
 - c) Non-Cerebral Computed Tomography
 - d) None of these
- (ii) State the route of contrast administration in CECT brain.
 - a) Intramuscular injection
 - b) Intravenous injection
 - c) Oral ingestion
 - d) Subcutaneous injection
- (iii) List the advantages of CT neck over MRI.
 - a) Better soft tissue contrast.
 - b) No radiation exposure.
 - c) Lower cost.
 - d) Suitable for patients with metal implants.
- (iv) Identify the condition that is NOT typically evaluated using CT neck.
 - a) Tumor
 - b) Fracture
 - c) Sinusitis
 - d) Otitis Media
- (v) Tell a common contrast agent used in CT Angiography imaging.
 - a) Gadolinium
 - b) Barium sulfate
 - c) Iodinated contrast media
 - d) Ferumoxytol
- (vi) Identify the purpose of a routine chest CT protocol
 - a) Assessing bone fractures
 - b) Evaluating soft tissue tumors
 - c) Detecting lung nodules and masses
 - d) All of these
- (vii) Select the primary reason for using a dual-energy CT technique in a routine chest protocol.
 - a) Improved spatial resolution
 - b) Reduced radiation dose
 - c) Better tissue characterization
 - d) Enhanced contrast enhancement
- (viii) Name the specialized imaging technique used to evaluate vascular structures in abdomen CT protocols, particularly for assessing aneurysms.

- a) Magnetic resonance angiography (MRA) b) Digital subtraction angiography (DSA)
- c) CT angiography (CTA) d) Ultrasound Doppler
- (ix) Tell, In a routine neck scan, a lateral localizer light should be situated at:
 - a) Perpendicular to the mid neck b) erpendicular to the midsagittal plane
 - c) Parallel to the mid neck d) Parallel to the level of the hyoid bone
- (x) Identify the reconstruction slice thickness of CT Temporal Bone Protocol.
 - a) 5-6 mm b) 2-4 mm
 - c) 0.5-1 mm d) 8-10 mm
- (xi) Select the location of topogram positioned for shoulder CT imaging.
 - a) At the level of the chin b) At the level of the pelvis
 - c) 3 cm superior to the shoulder joint d) 3 cm superior to the mediasternum
- (xii) Identify the clavicle shaft that should be included in the field of view for CT Shoulder.
 - a) Entire shaft b) At least lateral one third
 - c) At least medial one third d) None of the above
- (xiii) Identify the recommended patient positioning for CT ankle imaging.
 - a) Prone with feet first b) Supine with feet first, with partial flexion at the knee joint
 - c) Supine with feet first, with full flexion at the knee joint
- (xiv) Select the recommended slice thickness in reconstruction for Elbow CT.
 - a) 0.5-1 mm b) 1-2 mm
 - c) 5-8 mm d) 10-12 mm
- (xv) Identify a potential risk associated with CT Urography in pediatric patients.
 - a) Delayed diagnosis of urinary tract abnormalities b) Increased risk of contrast-induced nephropathy
 - c) Development of renal failure d) Higher sensitivity for detecting renal masses

Group-B

(Short Answer Type Questions)

3 x 5=15

- 2. Describe the preparation of patient in case of contrast studies. (3)
- 3. List the type, amount and mode of administration of contrast in a CT scan. (3)
- 4. Describe the planning and scan parameters of a HRCT thorax protocol. (3)
- 5. Distinguish between contrast-enhanced and non-contrast protocols for Lower Extremities CT scans. (3)
- 6. Examine the role of cardiac CT calcium scoring in coronary artery disease. (3)

OR

Classify the components of a standard CT enterography protocol, including contrast administration and imaging parameters. (3)

Group-C

(Long Answer Type Questions)

5 x 6=30

- 7. Evaluate the role of multiphasic CT in liver lesion characterization. (5)
- 8. Evaluate the advantages and limitations of CT angiography over DSA. (5)
- 9. Describe overview for performing a CT Thoracic spine. (5)
- 10. Describe Contrast enhanced abdomen CT protocol. (5)
- 11. Write about the Pitch, Slice thickness, Matrix Size and other factors involved in performing a CT scan. (5)
- 12. Analyze differences between cerebral angiography and carotid angiography. (5)

OR

Compare coronary angiography and CT coronary angiography.

(5)

LIBRARY
Brainware University
Parasat, Kolkata -700125