BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – B.Sc.(MRIT)-2022
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) Identify the contrast agent administered intravenously to enhance visualization of vascular structures and lesions in CECT brain protocol

a) Gadolinium b) Iodine
c) Barium d) Technetium

(ii) Choose the the purpose of using contrast for CT neck

a) To increase radiation exposure b) To highlight structures and enhance visibility
c) To reduce imaging time d) To eliminate the need for interpretation

(iii) Choose the correct Indication of Pulmonary Angiography

a) Pulmonary embolism b) Pulmonary hypertension
c) Suspected pulmonary thrombus d) All of theses

(iv) Choose among the following which is NOT typically included in a routine chest CT protocol

a) Lung apices b) Adrenal glands
c) Upper abdomen d) Chest wall

(v) State the primary advantage of using a low-dose chest CT protocol

a) Improved image quality b) Reduced radiation exposure
c) Faster scan time d) Enhanced soft tissue contrast

(vi) Select the appropriate term for the process of reconstructing CT images into three-dimensional representations of the chest

a) Multiplanar reformation (MPR) b) Volume rendering
c) Curved planar reformation (CPR) d) Surface rendering

(vii) Cite among the following patient factors is NOT typically considered before performing a routine abdomen CT protocol

a) Age b) Weight
c) Allergies d) Blood pressure

(viii) Name a potential complication associated with CT cardiac scoring

a) Increased blood pressure
b) Allergic reaction to contrast agent
c) Improved cardiac function
d) Enhanced immune response

(ix) State the primary advantage of CT Routine Pelvis over X-ray imaging for pelvic evaluation

a) Lower radiation exposure
b) Faster scan time
c) Higher spatial resolution
d) Reduced cost

(x) Cite the primary limitation of CT Routine Pelvis in pregnant patients

a) Increased risk of radiation exposure to the fetus
b) Decreased image quality
c) Limited availability of contrast agents
d) Inability to visualize pelvic structures

(xi) State the typical route for contrast administration in CT Routine Pelvis scans

a) Intravenous injection
b) Oral ingestion
c) Rectal administration
d) All of the above

(xii) Cite the main advantage of CT Cardiac Gating

a) Faster scan times
b) Improved spatial resolution
c) Reduction of motion artifacts
d) Higher contrast enhancement

(xiii) State the primary advantage of CT Cardiac Gating over conventional angiography

a) Lower cost
b) Less invasive
c) Faster acquisition time
d) Better visualization of soft tissues

(xiv) Name the phase of CT triphasic protocol where the hepatic artery is best visualized

a) Arterial phase
b) Venous phase
c) Delayed phase
d) Non-contrast phase

(xv) Cite the advantage of CT Fluoroscopy in lung interventions

a) Reduced risk of pneumothorax
b) Real-time visualization of lung tumors
c) Lower contrast agent requirement
d) Higher sensitivity for detecting pulmonary embolisms

Group-B

(Short Answer Type Questions) 3 x 5=15

2. Enumerate the indications, contraindication and patient preparartion in NCCT Head (3)
3. Illustrate the NCCT Thoracic spine protocol (3)
4. Explain the step-by-step procedure of conducting a Liver TPCT scan. (3)
5. write the indications for performing a CT urography and highlight its key parameters (3)
6. Write the scan parameters of the NCCT Head Protocol (3)

OR

Explain the procedure and preparation required for a HRCT (High-Resolution Computed Tomography) thorax scan. (3)

Group-C

(Long Answer Type Questions) 5 x 6=30

7. Illustrate the CECT chest protocol for determining lung pathologies (5)
8. Explain in detail about the NCCT protocol for lower extremities (5)
9. Differentiate between CT Enterography and CECT abdomen protocol (5)
10. Explain the CT urography protocol, including an in-depth discussion of its parameters and specifications. (5)
11. Describe the protocol employed in case of CT lung biopsy (5)
12. Summarize the Parameters, preparations and the clinical applications of Upper extremitities CTA (5)

OR

Summmarize the process of performing a CT fluorosopy (5)

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