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BRAINWARE UNIVERSITY

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398, Ramkrishnapur Road, Barasat
Kolkata, West Bengal-700125

Term End Examination 2025-2026

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

Course Name – Cross Section Anatomy & Physiology CT and MRI Part-I

Course Code - BMRITC502

(Semester V)

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 :

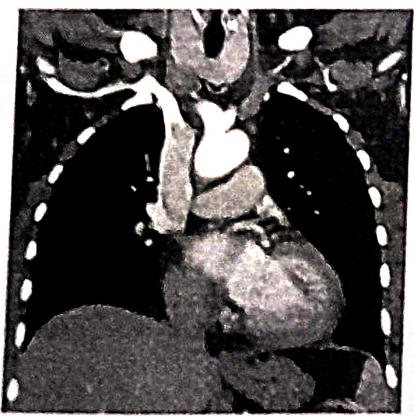
- (i) Identify the structure name from the following options which is seen in the axial plane at the level of the fifth lumbar vertebra?
 - a) Aorta
 - b) Stomach
 - c) Spinal cord
 - d) Pancreas
- (ii) Identify the correct structure from the following options which is located between the lungs and encased by the ribcage in an axial view of the chest.
 - a) Diaphragm
 - b) Liver
 - c) Heart
 - d) Spleen
- (iii) Predict the structure name from the following options which is visible in a coronal section through the head at the level of the eyes.
 - a) Nasal septum
 - b) Eyeballs
 - c) Tongue
 - d) Spinal cord
- (iv) Predict the correct structure from the following options which is visible in an axial section of forearm.
 - a) Ulna and radius
 - b) Spinal cord
 - c) Stomach
 - d) Phalanges
- (v) Select the correct anatomical term for the structures that are closer to the head in anatomical position?
 - a) Superior
 - b) Inferior
 - c) Medial
 - d) Lateral
- (vi) Identify the term for the inflammation of the appendix, which can be detected on imaging due to swelling and thickening?
 - a) Appendicitis
 - b) Diverticulitis
 - c) Irritable bowel syndrome (IBS)
 - d) Gastroenteritis
- (vii) Indicate the pathological condition characterized by the buildup of excessive fluid in the pleural space as seen on a CT or MR image.

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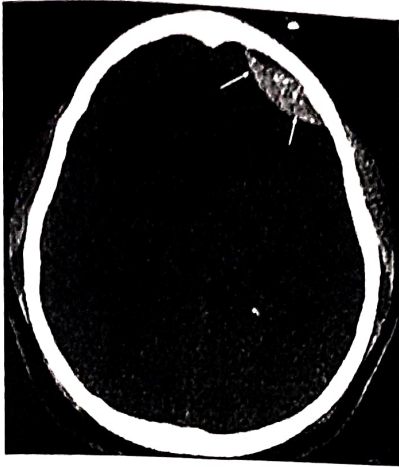
- a) Pneumonia
 - b) Pleural effusion
 - c) Pneumothorax
 - d) Pulmonary embolism
- (viii) Indicate the primary function of the pericardium?
- a) Breathing
 - b) Digestion
 - c) Protecting the heart
 - d) Immune response
- (ix) Indicate the main function of the thymus gland which is located in the anterior mediastinum?
- a) Digestion
 - b) Hormone production
 - c) Immune system development
 - d) Blood oxygenation
- (x) Identify the landmark of the thyroid cartilage.
- a) C1
 - b) Thyroid gland
 - c) C7
 - d) C2
- (xi) Identify the bright butterfly shaped structure at the level of the lateral ventricles in a transverse (axial) CT or Mr image of the brain.
- a) Thalamus
 - b) Cerebellum
 - c) Corpus callosum
 - d) Hippocampus
- (xii) Identify the paranasal sinus which is most commonly associated with sinusitis due to its susceptibility to blockage and infection?
- a) Sphenoid sinus
 - b) Ethmoid sinus
 - c) Maxillary sinus
 - d) Frontal sinus
- (xiii) Identify the meningeal layer which is the outermost layer and appears as a bright, thin line surrounding the spinal cord in a transverse CT or MR image?
- a) Dura mater
 - b) Arachnoid mater
 - c) Pia mater
 - d) Filum terminale
- (xiv) Indicate the right answer from the following options: Hydrocephalus is a condition characterized by an abnormal accumulation of:
- a) Blood in the brain
 - b) Cerebrospinal fluid in the brain
 - c) Brain tissue
 - d) Lipids in the brain
- (xv) Predict the imaging modality which is particularly useful for evaluating blood vessels and vascular anatomy in the head and neck region?
- a) X-ray angiography
 - b) Ultrasound
 - c) CT angiography
 - d) PET scan

Group-B
(Short Answer Type Questions) 3 x 5=15

- 2. Differentiate between the imaging characteristics of NCCT Brain and MRI Brain. (3)
- 3. Explain the concept of "planes" in sectional anatomy and provide some examples. (3)
- 4. Identify the cross sectional plane from below mentioned image along with the anatomical structures. (3)

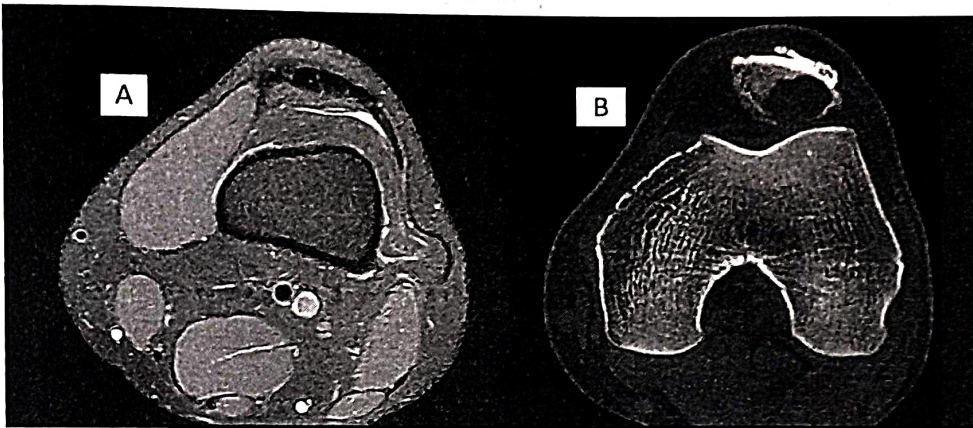


5. Identify the abnormal pathological finding from the below mentioned non-contrast axial CT Brain Image and write a short note on it. (3)



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6. Select the correct image of NCCT Knee Joint and explain about the anatomical structures. (3)



OR

- Analyze the normal appearance of the prostate gland on CT Scan axial images. (3)

Group-C

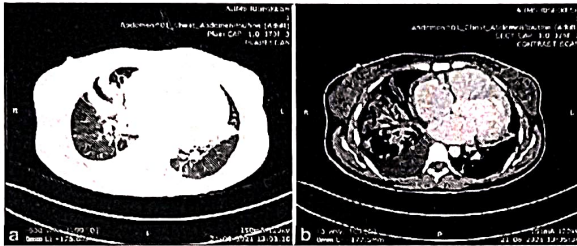
(Long Answer Type Questions)

5 x 6=30

7. Discuss about Brain Hemorrhages with proper diagram. (5)
8. Compare between male and female pelvis with proper diagram. (5)
9. Identify the pathological finding from the below mentioned image and explain about it. (5)



10. Describe about Sagittal, Coronal, Axial, Parasagittal & Trans spinal planes. (5)
11. Focus on the anatomical difference between the stomach and the liver in CT image? (5)
12. Select the correct image of HRCT thorax and identify the anatomical structures from the below given image. (5)



OR

Explain about the radiological appearance of the pancreas in a CT scan axial image. (5)

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