



## BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Sc.(MRIT)-2022

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 from the following options that is located posterior to the heart in the sagittal plane.
  - a) Lungs
  - b) Liver
  - c) Spinal cord
  - d) Kidneys
- (ii) Select the correct plane from the following options which divides the body into superior and inferior portions?
  - a) Sagittal plane
  - b) Coronal plane
  - c) Axial plane
  - d) None of these
- (iii) Predict the structure name from the following options which is visible in a sagittal section of thigh.
  - a) Tibia
  - b) Quadriceps muscle group
  - c) Kidneys
  - d) Liver
- (iv) Predict the structure name from the following options which is visible in a sagittal section of the neck.
  - a) Pancreas
  - b) Trachea
  - c) Stomach
  - d) Liver
- (v) Identify the structure from the following options which is seen in the axial plane at the level of the fourth lumbar vertebra?
  - a) Stomach
  - b) Spleen
  - c) Aorta
  - d) Bladder
- (vi) Indicate the another name of the first cervical vertebra.
  - a) Axis
  - b) Atlas

- c) Lumbar vertebra d) Sacrum
- (vii) Select the term for an inflammatory condition of the abdominal lining, typically seen on imaging due to fluid buildup?
- a) Peritonitis b) Ascites  
c) Abscess d) Pleuritis
- (viii) Identify the medical condition that is frequently evaluated and staged using CECT of the thorax.
- a) Diabetes mellitus b) Hypertension  
c) Lung cancer d) Osteoporosis
- (ix) Indicate the primary purpose of contrast-enhanced computed tomography (CECT) of the thorax?
- a) To assess bone fractures b) To evaluate cardiac function  
c) To visualize vascular and soft tissue structures d) To diagnose gastrointestinal disorders
- (x) Identify the correct term that refers to the pathological condition involving the presence of gallstones in the gallbladder.
- a) Cholecystitis b) Cholelithiasis  
c) Hepatitis d) Pancreatitis
- (xi) Indicate the term that refers to a pathological condition in which the bronchial tubes are permanently enlarged and lose their elasticity, leading to breathing difficulties.
- a) Asthma b) Bronchiectasis  
c) Chronic obstructive pulmonary disease (COPD) d) Pneumonia
- (xii) Select the correct artery from the following arteries which is not a part of the Circle of Willis?
- a) Anterior cerebral artery b) Middle cerebral artery  
c) Posterior cerebral artery d) Vertebral artery
- (xiii) Predict the primary advantage of using CT scans over MRI for imaging the spine in cases of trauma or suspected fractures?
- a) Better soft tissue contrast b) Absence of radiation exposure  
c) Higher resolution for bone detail d) Ability to visualize spinal cord lesions
- (xiv) Predict the definition of cerebral hemorrhage?
- a) An infection of the brain tissue b) Accumulation of cerebrospinal fluid in the brain  
c) Bleeding within the brain d) A benign brain tumor
- (xv) Choose the most common cause of intracerebral hemorrhage?
- a) Traumatic brain injury b) Brain tumor  
c) Hypertension d) Migraine headache

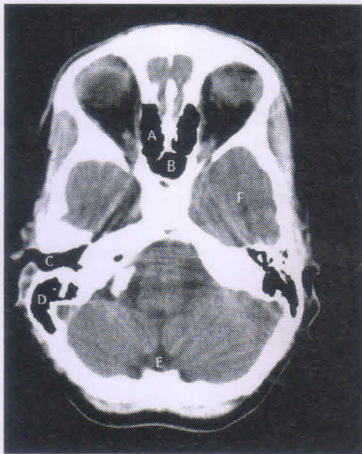
**Group-B**

(Short Answer Type Questions)  
(Answer any Five from the following)

3 x 5=15

2. Identify the labelled(A to F) anatomical structures from the below given axial CT Brain image. (3)





3. Discuss the role of cross-sectional image to identify complex anatomical structures. (3)
4. Describe any three pathological findings in the abdomen region that can be visible in CT imaging. (3)
5. Write about the arterial system of head and neck with proper diagram. (3)
6. Explain about the location of lateral ventricle in brain. (3)

OR

Explain about Subdural hematoma and it's radiological appearance in NCCT brain. (3)

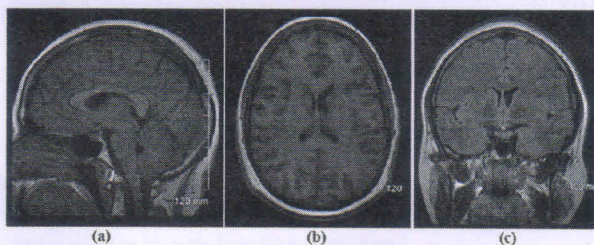
### Group-C

(Long Answer Type Questions)

5 x 6=30

(Answer any Six from the following)

7. Draw a labelled diagram of any one axial slice of CT brain and identify the different anatomical structures. (5)
8. Explain about the cross sectional anatomy of liver in CECT axial abdominal images. (5)
9. Explain about the normal cross sectional anatomy of thorax. (5)
10. Identify three different radiological planes from the below mentioned image and explain about the planes. (5)



11. Explain about the advantages of three-dimensional (3D) reconstruction in sectional anatomy? (5)
12. Differentiate between the radiological appearance of T1, T2 & DWI MRI Brain axial images. (5)

OR

Compare between male and female pelvis with proper diagram. (5)