



**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

UNIVERSITY EXAMINATIONS

2021/2022 ACADEMIC YEAR

THIRD YEAR SECOND TRIMESTER EXAMINATION

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN CLINICAL MEDICINE**

COURSE CODE: HCM 418
COURSE TITLE: IMAGING SCIENCES (RADIOLOGY)

DATE: WEDNESDAY 24TH AUGUST 2022 TIME: 2:00-5:00 PM

Instructions:

- 1. Time -3hours**
- 2. Write your university registration number on every sheet of paper used**
- 3. Answer all questions in all the three sections**
- 4. Section A comprises 20 Multiple Choice Questions**
- 5. Section B comprises 4 Short Answer Questions**
- 6. Section C comprises Long essay Questions**



SECTION A: MULTIPLE CHOICE QUESTIONS (20marks)

1. The world first radiograph was for and it lasted..... Minutes
 - A. Wrist ,20
 - B. Skull ,30
 - C. Hand, 15
 - D. Wrist 15

2. X-rays belong to a group of radiations called.....radiation
 - A. Electromagnetic
 - B. Ionizing
 - C. Magnetic
 - D. Gamma

3. In what year were some of the biologically damage effects of x-ray discovered
 - A. 1892
 - B. 1895
 - C. 1898
 - D. 1901

4. A high transverse stomach in a radiograph would be found in a(n) patient.
 - A. Hypersthenic
 - B. Hyposthenic
 - C. Sthenic
 - D. Asthenic

5. Which part of the stomach will fill with air when the patient is prone?
 - A. Fundus
 - B. Body
 - C. Duodenal bulb
 - D. Pylorus

6. Which of the the following terms describes the conditions of having gallstones?
 - A. Cholecystitis
 - B. Cholelithiasis
 - C. Cholecystectomy
 - D. Cholelith

7. is the recommended projection to be taken during a small bowel study series.
 - A. Supine AP
 - B. Left lateral decubitus
 - C. Erect AP
 - D. Prone PA.

8. Which one of the following conditions is classified as a form of pneumoconiosis?
 - A. Tuberculosis
 - B. Emphysema
 - C. Silicosis
 - D. Pleurisy

9. Which chest projection/position should be performed to demonstrate a pneumothorax in the left lung if

the patient cannot stand?

- A. AP supine
- B. Left lateral decubitus
- C. AP lordotic
- D. Right lateral decubitus

10. A new born is diagnosed with RDS which one of the following procedures is commonly performed for this condition?

- A. Abdomen
- B. Ct of the head
- C. Functional MRI
- D. Chest

11. A child come to the out patient department with possible croup ,which of the following procedures will best demonstrate this condition

- A. AP and lateral upper airway
- B. Erect abdomen
- C. PA and lateral chest
- D. Sinus series

12. Which of the following conditions can be diagnosed prenatally with sonography?

- A. Tourette syndrome
- B. Vesicoureteral reflux
- C. Spina bifida
- D. Autism

13. Osgood-Schlatter disease be demonstrated in which of the following routine radiographic procedures?

- A. Barium enema
- B. AP and lateral hip
- C. Upper GI studies
- D. AP and lateral knee.

14. A pathologic condition in which twisting of a loop of intestine creates an obstruction is termed

- A. Intussusception
- B. Volvulus
- C. Ascites
- D. Adynamic ileus

15. The most frequently fractured carpal bone is the:

- A. Trapezium
- B. Pisiform
- C. Capitate
- D. Scaphoid

16. Is described as a bruise, without fracture.

- A. contusion
- B. sprain
- C. dislocation
- D. subluxation

17. Coronary angiography is atypically a study of the :
- coronary arteries
 - coronary veins
 - aortic arch
 - chambers of the heart
18. An abnormally increased “sway-back” spinal curvature is termed:
- Kyphosis
 - Lordosis
 - Scoliosis
 - Thorosis
19. A comminuted fracture of the anterior and posterior arches of C1 is termed:
- Hangman’s fracture
 - Clay shoveler’s fracture
 - Jefferson fracture
 - Teardrop burst fracture
20. Intussusception is most common in _____.
- Children younger than 2 years of age
 - Children between the ages of 3 and 5 years
 - Adolescents
 - Males between the ages of 20 and 35 years

SECTION B: SHORT ANSWER QUESTIONS (40 MARKS)

1. Explain the following specialized radiological studies with their contra- indications

a)HSG	(3marks)
b)IVU	(3Marks)
c) MCU	(4marks)
- 2..a)Briefly describe four reasons for erect chest x-ray position. **(3marks)**
 - b)Explain the main reason for creatinine test levels for a patient attending radiology department for a contrast study(2marks)
 - c)List 5 common pathological indications of cerebral angiography (5Mark)
3. Describe the 3 golden rules of a chest radiograph interpretation . (6marks)
- 4..Describe FOUR types of pelvis (4marks)
- 5.List FIVE factors to consider when interpreting abdominal x-ray (5marks)
- 6.Explain FIVE indications first trimester obstetrics ultrasound.(5marks)

SECTION C: LONG ANSWER QUESTIONS (40 marks)

1. A patient is brought to the accident and emergency department with multiple injuries from RTA and is unconscious,

- a) Briefly explain the main radiological modalities that will be used in the radiology department for diagnosis. **(3marks)**
- b) List and explain the major components of the request form for the above case **(7marks)**
- c) When managing this patient “trauma series” and “FAST” scan may be ordered by the clinician for diagnosis. Describe the terms and explain the major anatomy of interest and the report expected **(10marks)**

2. Radiological study of the Gastrointestinal system involves various contrast studies.

- a) Describe 4 specialised contrast studies of GIT system and the indications **(12M arks)**
- b) Ionic contrast may cause systemic reactions to patients, briefly explain symptoms of these reactions under the following **(6marks)**
 - i) Mild reactions
 - ii) Moderate reactions
 - iii) Sever reactions
- c) explain two ways to intervene in case of sever contrast reaction **(2marks)**

