



**AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCE
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF SEPT-DECEMBER 2024 TRIMESTER EXAMINATIONS**

UNIT CODE: PHT 222

**UNIT NAME: Diagnostic Procedures, Imaging and
Differential Diagnosis (Special)**

DATE: Day/ Date/ AUGUST

TIME: TWO HOURS

START: 0:00 STOP : 0:00

INSTRUCTIONS (physical exams)

1. Do not write on this question paper

(Marks and questions distribution as per program curriculum.)

INSTRUCTIONS (Online examinations)

1. This exam is marked out of 70 marks
2. This Examination comprises 3 Sections
3. This online exam shall take 2 Hours
4. Late submission of the answers will not be accepted
5. Ensure your web-camera is on at all times during the examination period
6. No movement is allowed during the examination
7. Idling of your machine for 5 min or more will lead to lock out from the exam
8. The Learning Management System (LMS) has inbuilt integrity checks to detect cheating
9. Any aspect of cheating detected during and or after the exam administration will lead to nullification of your exam
10. In case you have any questions call the invigilator for this exam on Tel. 0705833434 and or the Head of Department on Tel 0720491032
11. For adverse incidences please write an email to: amiu.examinations@amref.ac.ke

Section A. Multiple choice question. Answer all the questions (30 marks)

1. Characteristics of neuromuscular pain pattern
 - a. It has a dull character
 - b. Can be localized
 - c. Has association with the clients emotional state
 - d. Its relieved with rest
2. The following statement is true about MRI imaging technique
 - a. It exposes the patient to high amount of radiation in a cycle
 - b. T1 waited sequences primarily highlights normal anatomy and fluids
 - c. T2 waited image primarily highlights pathology involving fluid build up
 - d. All statements are true
3. Inflammatory arthritis
 - a. Joint space narrowing is asymmetrical
 - b. It involves swelling of the soft tissue
 - c. Presence of erosions
 - d. All of the above
4. Radiographic features of gout
 - a. Joint effusion is the earliest sign
 - b. Preservation of joint spaces until late stages
 - c. Well defined punched out erosion with sclerotic margin in a marginal and juxta articular distribution with overhanging edges.
 - d. First metacarpophalangeal joint is the most common site.

5. Potts disease
 - a. There's involvement of several vertebral bodies with disc destruction
 - b. Psoas muscle abscess is present
 - c. Gibbus deformity is present
 - d. All statements are true

6. In congenital infections of the bone
 - a. Bone changes occur in 50% of patients with Rubella
 - b. Celery stalking is a radiographic sign
 - c. Congenital rubella presents with the Wimbergers sign
 - d. None of the above

7. In development dysplasia of the hip of infants
 - a. The most diagnostic sign is the ortolanis limitation of abduction
 - b. X-rays can be helpful
 - c. Ultrasound is 100% diagnostic
 - d. Shortening of the limb this age doesn't exist.

8. Cleidocranial dysostosis
 - a. Presence of Wormian bones
 - b. Absent clavicle
 - c. Exaggerated kyphosis
 - d. Spares the pelvic region

9. In osteomalacia
 - a. Loosers zone present
 - b. Generalized bone density reduction
 - c. Bone softening
 - d. All statements are true

10. A known hyperthyroidism client present with an xray of the vertebrae. What are the radiographic findings you'll expect to find?

- a. Increased cortical tunneling
- b. Wide sutures with delayed closure
- c. Presence of Wormian bones
- d. Retarded skeletal maturation

11. Radiographic features of osteoporosis except

- a. Decreased radio-density of the bone
- b. Presence of low trauma fractures
- c. Thinning of cortex in the tubular bones of hands
- d. There is a proportionate loss of trabecular bone.

12. In a chest xray which of the following are peripheral tumors

- a. Adenocarcinoma
- b. Small cell carcinoma
- c.

13. Radiographic features of a central tumor

- a. Atelectasis
- b. The golden s sign
- c. Bronchial cut off sign
- d. Deviation of the trachea contralateral side of the lesion

14. Radiographic complication of a pneumonia in a chest x-ray include

- a. Pneumatocele
- b. Parapneumonic effusion
- c. Pulmonary abscess
- d. Atelectasis

15. Aspergilloma

- a. Altering position of patient usually demonstrates the lesion is mobile
- b. Occurs exclusively in patients with asthma
- c. Finger in glove like appearance in an x-ray
- d. None of the above statements is true.

16. Intra axial hemorrhage

- a. They are always associated with bleeding into the ventricles
- b. On an MRI, the signal depends on the age of bleed
- c. A and b correct
- d. Both incorrect

17. Brain imaging of meningitis

- a. T1 Waited image may show obliteration of the basal cisterns
- b. T2 weighted image may show an abnormal cortical hyperintensity
- c. All statements are true
- d. None is true

18. The following parameters are used in the assessment of the vertebrae after a motor vehicle accident

- a. Bone density and mineralization
- b. Anatomy and alignment of the bone
- c. Cartilage and joint spaces
- d. Soft tissues and size of the bone.

19. In congenital bone anomalies, false statement

- a. There is asymmetrical shortening of long bones in achondroplasia
- b. Osteopetrosis Erlenmeyer flask deformity
- c. Osteogenesis imperfecta is also referred to as marble disease

d. Trident hands is a feature of achondroplasia.

20. Causes of pathologic fractures

- a. Osteoporosis
- b. Infection
- c. Malignancy
- d. All of the above

21. Giant cell tumor (false statement)

- a. It affects the epiphyses more
- b. Affects adults
- c. Its a benign tumor
- d. Its not locally aggressive

22. Chronic GI blood loss associated with the use of NSAIDs is associated with which type of problem

- a. Iron deficiency anemia
- b. Decreased heart rate and bleeding
- c. Weight loss fever and loss of appetite
- d. Increased incidence of joint inflammation

23. Bleeding under the skin, nosebleeds, bleeding gums and black stools require medical evaluation as these may be signs of

- a. Thrombocytopenia
- b. Leukopenia
- c. Polycythemia
- d. Sickle cell anemia

24.



- a. Boutonniere deformity
- b. Swan neck deformity
- c. Hitchhikers thumb
- d. Telescope fingers.

25. Septic arthritis

- a. Its mono articular
- b. Osteophytes formation
- c. Presence of erosions
- d. Sclerosis is seen in an xray

26. Neuropathic pain pattern

- a. Can be acute or chronic
- b. Neuropathic pain is not relieved by opiates
- c. Can be drug induced
- d. All statements are true.

27. Brain imaging of tumors true statement

- a. Extra axial tumors crowd the fronds of white matter and produce white matter buckling
- b. Intra axial tumors expands white matter, thickening white matter fronds
- c. In intra axial tumors, the tumor is bathed by white matter edema

d. All of the above

28. The most common organisms causing osteomyelitis of the spine ...

- a. Staph. Aureus
- b. Tuberculosis
- c. Pseudomonas
- d. streptococcus

29. The most common location of bone infections in children is

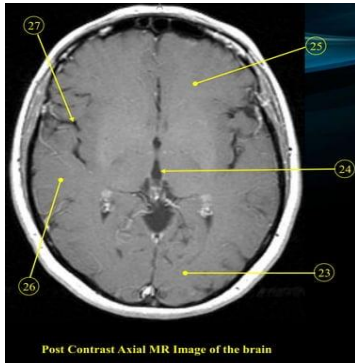
- a. Metaphysis
- b. Epiphysis
- c. Vertebrae
- d. phalanges

30. The following is characteristic of a benign bone tumor

- a. Onion skin
- b. Codman triangle
- c. Sunburst appearance
- d. Geographic appearance of the lesion

Section B. Short structured questions. Answer all the question (20 Marks).

1. Label the five areas indicated by the yellow line. 5 marks



2. What type of fracture is this 2 marks



3. Describe the radiographic findings in this bone xray 5marks



4. Mention 4 causes of leukopenia 4 marks
5. Mention 4 triggers of sickle cell crisis. 4 marks

Section C. Long structured questions. Answer all the questions. (20 Marks)



- a. What imaging modality is this?
 - b. Describe the quality of the image.
 - c. What would influence the quality of this imaging modality?
 - d. Describe the radiographic findings ?.
 - e. Give 2 possible differential diagnosis.
2. A client came to you with this imaging modality. He complains of a history of chronic cough , chest pain, hemoptysis, night sweats and difficulty in breathing (10 Marks).
- a. Describe the findings
 - b. And give a possible diagnosis
 - c. Mention 3 advantages of an MRI over a CT Scan

