



**AMREF INTERNATIONAL UNIVERSITY**

**SCHOOL OF MEDICAL SCIENCES**

**DEPARTMENT OF REHABILITATIVE MEDICINE**

**BACHELOR OF SCIENCE IN PHYSIOTHERAPY**

**END OF TRIMESTER EXAMINATIONS JANUARY TO APRIL 2024**

**UNIT CODE: PHT 233**

**UNIT NAME: DIAGNOSTIC PROCEDURES**

**DATE: 19<sup>th</sup> APRIL 2024**

**INSTRUCTIONS**

1. **All students will have two (2) hours to complete the examination**
2. **This is an **online exam**, Attempt all questions as per the instruction**
3. **It is the student's responsibility to report any page and number missing in this paper.**

## SECTION A

- Osteomyelitis most commonly starts at:
  - Epiphysis
  - Metaphysis
  - Diaphysis
  - None
- X-ray shoulder of the patient with following image shows:
  - Ewing's sarcoma
  - Osteosarcoma
  - Callus
  - Chronic osteomyelitis
- Commonest cause of acute osteomyelitis:
  - Trauma
  - Surgery
  - Fungal infection
  - Hematogenous route
  - Tubercular infection.
- Which of the following is difference between Rheumatoid arthritis and osteoarthritis?
  - Osteophytes are seen in osteoarthritis
  - Systemic symptoms are seen in osteoarthritis
  - Rheumatoid arthritis is uncommon in hands and feet
  - Osteoarthritis is an autoimmune disease
- Joint spared in RA is:
  - Wrist
  - PIP
  - MCP
  - DIP
- Osteoblastoma (all true except)
  - Involves the posterior element of the vertebrae
  - Pain unresponsive to NSAIDs
  - Large tumor >2cm
  - Malignant tumor.
- 42 year old male with frequent attacks of joint pain, underwent an X-ray showing soft tissue swelling, The likely diagnosis is:
  - Gout
  - Parathyroid adenoma
  - Psoriasis
  - RA

8. Which imaging modality provides the best assessment of bone marrow disorders?

- A) X-ray
- B) MRI
- C) CT scan
- D) PET scan



9. Radiographic features of?

- A. Rickets
- B. Osteomalacia
- C. Metaphysis fracture
- D. Osteoporosis

10. Which of the following imaging modalities is the most sensitive for detecting bone metastases?

- A) X-ray
- B) MRI
- C) CT scan
- D) PET scan

11. Osteoporotic female on prolonged bisphosphonates has hip pain next investigation is:

- A. X-rays
- B. Vitamin D
- C. ALP
- D. DEXA

12. "Trident hand" seen in:

- A. Achondroplasia
- B. Mucopolysaccharidosis
- C. Diaphyseal achalasia
- D. Cleidocranial dysostosis

13. Commonest deformity in congenital dislocation of hip:
- A. Small head of femur
  - B. Angle of torsion
  - C. Decreased neck shaft angle
  - D. Shallow acetabulum
14. When imaging the brain which modality is indicated in diagnosing subarachnoid hemorrhages
- A. MRI
  - B. A contrast CT
  - C. Non-contrast CT
  - D. None of the above
15. The best follow up question of a client with a constant pain is?
- A. Can you use one finger to point to the pain location
  - B. Do you have the pain right now
  - C. Is there anything that makes the pain better or worse
  - D. Does the pain wake you up at night when you fall asleep
16. Pain by a viscerogenic source is not relieved by a change in position
- A. True
  - B. False
17. Joint pain can be a reactive, delayed, or an allergic response to
- A. Medications
  - B. Infections
  - C. Artificial sweeteners
  - D. Chemicals
  - E. All of the above.
18. Intense bone pain that is relieved by aspirin is a sign of
- A. Neoplasm
  - B. Fracture
  - C. Assault or trauma
  - D. Drug dependency.
19. When assessing the abdomen, what sequence of physical assessment is best
- A. Auscultation, palpation, percussion, inspection
  - B. Inspection, percussion, palpation, auscultation
  - C. Inspection, auscultation, percussion, palpation.
  - D. Auscultation, inspection, percussion, palpation
20. Characteristics of osteogenesis imperfecta all true except
- A. Diffuse osteopenia with thick cortices
  - B. Multiple diaphyseal fractures
  - C. Pseudotumors
  - D. Bowing deformities

21. Alzheimer's disease CT scan shows
- A. Diffuse cortical atrophy of the brain
  - B. Widening of the ventricles
  - C. Deepening of Sulcus
  - D. All of the above.
22. In Development dysplasia of the hip (false statement)
- A. Subluxation of the hip
  - B. Ligament and capsular laxity
  - C. Dislocatable hip
  - D. More in females than males
  - E. None of the above.
23. Imaging characteristics of bone tumors
- A. Extra axial tumors crowd fronds of white matter producing white matter buckling
  - B. Fronds of white matter insinuates into cortical gray matter in extra axial tumor
  - C. Intra axial tumors expands white matter, thickening white matter fronds.
  - D. All of the above.
24. A 15-year-old client presents with this X-ray. What type of tumor is this
- A. Osteosarcoma
  - B. Ewing sarcoma
  - C. Chondrosarcoma
  - D. Osteoidosteoma



25. Which imaging modality is commonly used for diagnosing degenerative disc disease?
- A. X-ray
  - B. CT scan
  - C. MRI
  - D. Ultrasound

26. In osteochondroma which imaging modality is used to assess malignancy.

- A. MRI
- B. CT with contrast
- C. Xray
- D. DEXA

27. Which radiological finding is characteristic of osteogenesis imperfecta on X-ray?

- A. Diffuse sclerosis of bones
- B. Erlenmeyer flask deformity
- C. Codfish vertebrae
- D. Syndactyly

28. What imaging modality is used to evaluate congenital hip dysplasia in newborns?

- A. Xray
- B. MRI
- C. Ultrasound
- D. CT-Scan

29. When assessing plain radiographs which is correct according to descending order of tissue radio density?

- A. Air-fat-water-bone-metal
- B. Metal-bone-fat-water-air
- C. Air-water-fat-bone-metal
- D. Metal-bone-water-fat-air

30. What do you see?



- A. MRI showing subarachnoid hematoma
- B. CT scan showing subdural hematoma
- C. CT scan showing subarachnoid hematoma
- D. MRI showing subdural hematoma

**SECTION B**

**/20marks**

31. 3 Mechanisms of referred visceral pain
32. Mention the 5 sources of pain
33. Radiographic features characteristic of a benign solitary nodule in a chest x-ray.(mention 3)
34. How do we differentiate syphilis from rubella congenital bone infection in a radiograph? (Mention 2).
35. Early sign of vertebral osteomyelitis is \_\_\_\_\_
36. Extradural hemorrhage is a traumatic accumulation of blood located between \_\_\_\_\_ and \_\_\_\_\_
37. T1 weighted MRI sequence enhances the signal of \_\_\_\_\_ and suppresses the signal of \_\_\_\_\_.



38. What type of fracture is this
39. Mention 3 differences between Osteoarthritis and rheumatoid arthritis

**SECTION C**

**/20Marks**

40. a) A client presents with complaints of pain. What would be the components of your interview/history taking.

b) Compare systemic vs Neuromusculoskeletal pain patterns (mention 5)

41. a) Interpret the chest x-ray below.



43. b) Clinical and radiographic features of pancoast tumor