



**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**

**DATE: Wednesday/ 11th/ December
TIME: TWO HOURS
START: 11.15am STOP : 1.15pm**

INSTRUCTIONS (physical exams)

Do not write on this question paper

(Marks and questions distribution as per program curriculum.)

1. This exam is marked out of 70 marks
2. This Examination comprises 3 Sections
3. This exam shall take 2 Hours

Section A. Multiple choice answer. Answer all the questions (30 Marks)

1. MRI in the assessment of arthritis
 - A. Identify osteophytes
 - B. Evaluating bone mineral density
 - C. Visualizing joint space narrowing
 - D. Assessing soft tissue involvement

2. When evaluating a patients xray, it is important use the ABCs approach. Which of the following does it represent?
 - A. Alignment-bone mineralization- cortex density- Soft tissues
 - B. Assessment- bone mineralization- cortex density-soft tissues
 - C. Assessment- bone marrow-cartilage space-soft tissues
 - D. Alignment- bone mineralization- cartilage space-soft tissues.

3. 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

4. What imaging modality is used to evaluate congenital hip dysplasia in newborns?
 - A. Xray
 - B. MRI
 - C. Ultrasound
 - D. CT-Scan

5. Pain esp.Intense bone pain that is relieved by aspirin is a sign of
 - A. Neoplasm
 - B. Fracture
 - C. Assault or trauma
 - D. Drug dependency.

6. 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
7. Characteristics of osteogenesis imperfecta all true except
- A. Diffuse osteopenia with thick cortices
 - B. Multiple diaphyseal fractures
 - C. Pseudotumor
 - D. Bowing deformities
8. One of the following statement about osteomyelitis is true
- A. The earliest sign is soft tissue swelling
 - B. The most common bacteria in children is streptococcus viridae
 - C. Involucrum marks the beginning of chronic infection.
 - D. In potts disease only one vertebral body undergoes destruction
9. In congenital infections of the bone
- A. Periosteal reaction is prominent in syphilis
 - B. Wimbergers sign is a sign of rubella infection
 - C. Celery stalking of the metaphysis is a radiographic feature
 - D. All of the above
10. Brain imaging of tumors true statement
- A. Extra axial tumors crowd the fronds of white mater 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 what matter edema
 - D. All of the above

11. Below are the characteristics of viscerogenic type of pain
- A. May depend on persons anxiety levels
 - B. There's reduced range of motion
 - C. Achy cramping pain that's relieved by rest
 - D. None of the above.
12. In physiotherapy , symptoms of blood disorders are most common with
- A. Use of NSAIDs
 - B. Chemotherapy and radiotherapy
 - C. Pernicious anemia
 - D. All of the above.
13. polycythemia
- A. Its associated with smoking
 - B. Can lead to stroke
 - C. Associated with intravascular thrombi
 - D. All of the above.
14. The most common organisms causing osteomyelitis of the spine ...
- A. Staph. Aureus
 - B. Tuberculosis
 - C. Pseudomonas
 - D. streptococcus
15. All of the following tumors are benign tumors except
- A. Chondroma
 - B. Enchondroma
 - C. Ewing sarcoma
 - D. Osteochondroma

16. Radiographic features of hypothyroidism include

- A. Wide suture with delayed closure
- B. Wormian bones
- C. Epiphyses are late in appearing and are fragmented
- D. All of the above.



17.

The most likely diagnosis for the tumor at upper end of the tibia is

- A. Giant cell tumor
- B. Chondroblastoma
- C. Osteoid osteoma
- D. ABC

18. What type of fracture is this?



- A. Open fracture
- B. Comminuted fracture
- C. Displaced fracture
- D. All of the above

19. A young man complains of pain lower back his X-rays are shown below. Mostlikely diagnosis is:



- A. Ankylosis Spondylitis
- B. Spondylolisthesis
- C. Paget's disease
- D. Osteoporosis.

20. Osteoporosis is seen in:

- A. Thyrotoxicosis
- B. Cushing's disease
- C. Menopause
- D. All of the above

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

- A. Leukopenia
- B. Thrombocytopenia
- C. Polycythemia
- D. Sickle cell anemia

22. Chondrosarcoma

- A. Its a malignant tumor
- B. Forms an osteoid matrix
- C. Most common in the elderly
- D. Common in flat bones of the pelvis.

23. Telescope fingers is a radiographic feature of

- A. Osteoarthritis
- B. Rheumatoid arthritis
- C. Reactive arthritis
- D. Septic arthritis

24. A 15-year-old client presents with this X-ray. What type of tumor is this

- A. A. Osteosarcoma
- B. Ewing sarcoma
- C. Chondrosarcoma
- D. D. Osteoid osteoma



25. Which imaging modality is commonly used for diagnosing degenerative disc disease?
- A. X-ray B. MRI C. CT scan D. Ultrasound
26. In osteochondroma which imaging modality is used to assess malignancy.
- A. MRI
B. CT with contrast
C. X-ray
D. DEXA
27. Which of the following is difference between Rheumatoid arthritis and osteoarthritis?
- A. Osteophytes are seen in osteoarthritis
B. Systemic symptoms are seen in osteoarthritis
C. Rheumatoid arthritis is uncommon in hands and feet
D. Osteoarthritis is an autoimmune disease
28. Which radiographic feature is characteristic of a solitary pulmonary nodule on chest xray
- A. Spiculated margins
B. Central calcification
C. Popcorn like appearance
D. Halo- sign

29. Which Imaging modality exposes the patient to greater radiation with a single test?

- A. Plain X-ray
- B. MRI
- C. CT-Scan
- D. Ultrasound

30. What is the primary imaging modality of choice for assessment of pulmonary infections in the initial diagnostic work up

- A. Chest x-ray
- B. CT-Scan
- C. MRI
- D. Fluoroscopy

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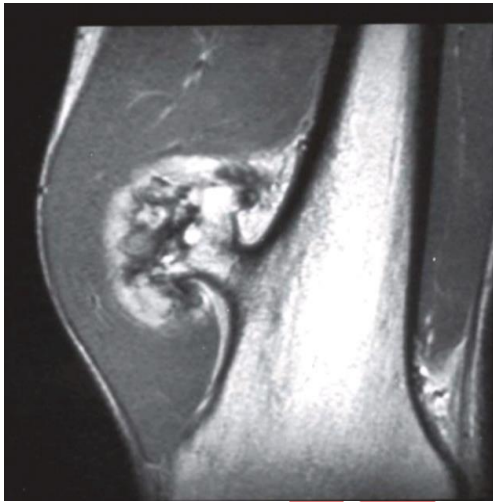
Section B. Short structured question. Answer all the questions. (20 Marks)

31) Radiographic features of rickets (mention 3)

32) Characteristic features of osteoarthritis in a radiograph (mention 3)

33) Radiographic features characteristic of a benign solitary nodule in a chest x-ray.(mention 3)

34) Radiographic features characteristic of a benign solitary nodule in a chest x-ray.(mention 3)



35. A. Name the imaging above 1 mark

B. What's the name of this tumor 2marks

C. What are characteristic features of this tumor. 3 mark

36.



Looking at this imaging what is your diagnosis of a patient who's been in a motorcycle accident
2marks

SECTION 3. Long structured questions. Answer all the questions 20MARKS

37. A 20 year old client presents to you with complaints of severe right knee joint pain.

A. Take a detailed history (10 Marks)

38. She could recall no traumatic injury but reported hiking 2 days ago with her brother. A general screen for systemic illness revealed frequent urination. She also complained of stomach pain. Past medical history revealed similar episodes when she had acute pneumonia at 11 years old. She also reports feeling fatigue, dizziness every now and then (10 Marks)

A. What red flags is this patient presenting

B. What is the possible diagnosis and how would you manage this patient.



C. Interpret the chest x-ray above