1. Which of the following treatment modalities is the cornerstone of managing localized Ewing's sarcoma?
   A. Radiation therapy
   B. Chemotherapy
   C. Surgical resection
   D. Targeted therapy
   E. Immunotherapy
   Answer: B

2. Which molecular pathway is primarily disrupted in Ewing's sarcoma due to the EWS-FLI1 fusion protein, leading to tumorigenesis?
   A. MAPK/ERK signaling pathway
   B. Wnt/β-catenin signaling pathway
   C. Hedgehog signaling pathway
   D. Notch signaling pathway
   E. IGF-1/IGF-1R signaling pathway
   Answer: E

3. Conventional intramedullary osteosarcoma is most commonly diagnosed at which stage according to the MSTS system?
   A. Stage IA
   B. Stage IB
   C. Stage IIA
   D. Stage IIB
   E. Stage III
   Answer: D

4. What is the standard treatment approach for parosteal osteosarcoma?
   A. Chemotherapy alone
   B. Radiation therapy alone
   C. Wide local surgical excision
   D. Targeted therapy
   E. Immunotherapy
   Answer: C

5. Which of the following radiological signs is most commonly associated with osteosarcoma?
   A. Ground-glass appearance
   B. Codman's triangle
   C. Onion skinning
   D. Soap bubble appearance
   E. Sunburst pattern
   Answer: E

6. In the context of Ewing sarcoma, which of the following radiological features is most characteristic?
    A. Sunburst pattern
    B. Sclerotic lesions
    C. Moth-eaten appearance
    D. Onion skin periosteal reaction
    E. Expansile lytic lesion
    Answer: D

7. The "fallen fragment sign" is most commonly observed in which of the following bone tumors?
    A. Osteoid osteoma
    B. Simple bone cyst
    C. Chondrosarcoma
    D. Giant cell tumor
    E. Ewing sarcoma
    Answer: B

8. Which bone tumor typically presents with a "soap bubble" appearance on radiographs?
    A. Osteosarcoma
    B. Fibrous dysplasia
    C. Giant cell tumor
    D. Chondrosarcoma
    E. Ewing sarcoma
    Answer: C

9. A well-defined lytic lesion with a "narrow zone of transition" and no periosteal reaction is most characteristic of which bone tumor?
    A. Osteosarcoma
    B. Fibrous dysplasia
    C. Chondroblastoma
    D. Enchondroma
    E. Osteochondroma
    Answer: D

10. Which of the following genetic syndromes is most commonly associated with early onset scoliosis?
    A. Marfan syndrome
    B. Down syndrome
    C. Neurofibromatosis type 1
    D. Prader-Willi syndrome
    E. Ehlers-Danlos syndrome
    Answer: C.

11. In early onset scoliosis, which imaging modality is most critical for assessing the underlying intraspinal anomalies?
    A. X-ray
    B. Ultrasound
    C. CT scan
    D. MRI
    E. Bone scan
    Answer: D.

12. The most common congenital vertebral anomaly associated with early onset scoliosis is:
    A. Hemivertebra
    B. Block vertebra
    C. Butterfly vertebra
    D. Klippel-Feil anomaly
    E. Wedge vertebra
    Answer: A.

13. What is the primary concern in the management of early onset scoliosis in very young children?
    A. Cosmetic appearance
    B. Spinal cord compression
    C. Pulmonary function
    D. Lower back pain
    E. Leg length discrepancy
    Answer: C.

14. Which of the following is the most likely progression indicator of early onset scoliosis?
    A. Cobb angle >20 degrees at diagnosis
    B. Presence of rib vertebral angle difference (RVAD. >20 degrees
    C. Curves located in the thoracolumbar region
    D. Family history of scoliosis
    E. Scoliometer reading >5 degrees
    Answer: B

15. Which of the following primary cancers is most likely to cause osteoblastic (sclerotic. spinal metastases?
    A. Lung cancer
    B. Renal cell carcinoma
    C. Prostate cancer
    D. Multiple myeloma
    E. Thyroid cancer
    Answer: C.

16. In the context of spinal metastasis, which of the following imaging findings is most predictive of impending pathological fracture?
    A. Mild vertebral body collapse with intact posterior elements
    B. Cortical destruction with involvement of more than 50% of the vertebral body
    C. Isolated pedicle lesion without vertebral body involvement
    D. Small lytic lesion in the vertebral body
    E. Diffuse marrow infiltration without cortical involvement
    Answer: B

17. Which of the following gait patterns is most commonly associated with spastic diplegia in cerebral palsy?
    A. Crouch gait
    B. Trendelenburg gait
    C. Hemiplegic gait
    D. Ataxic gait
    E. Steppage gait
    Answer: A

18. In children with cerebral palsy, which of the following factors is most predictive of the development of an equinus gait pattern?
    A. Prolonged Achilles tendon shortening
    B. Spasticity of the hamstrings
    C. Weakness of the hip abductors
    D. Overactivity of the iliopsoas
    E. Pelvic obliquity
    Answer: A

19. Which of the following is the most common cause of intoeing in toddlers?
    A. Metatarsus adductus
    B. Internal tibial torsion
    C. Femoral anteversion
    D. Developmental dysplasia of the hip (DDH.
    E. Genu varum
    Answer: B.

20. In the evaluation of a child with out-toeing, which of the following findings is most indicative of femoral retroversion?
    A. Internal rotation of the hip greater than 70 degrees
    B. External rotation of the hip greater than 90 degrees
    C. Thigh-foot angle of more than 30 degrees externally
    D. Medial deviation of the foot relative to the thigh
    E. Decreased internal rotation of the hip to less than 10 degrees
    Answer: E.

21. Which of the following structures is most commonly involved in the soft tissue contracture associated with congenital Talipes Equinovarus?
    A. Tibialis anterior
    B. Posterior tibial tendon
    C. Achilles tendon
    D. Peroneus longus
    E. Flexor digitorum longus
    Answer: C.

22. Which of the following radiographic signs is considered most indicative of a poor prognosis in Perthes disease?
    A. Gage's sign
    B. Caffey's sign
    C. Head-at-risk signs
    D. Lateral pillar involvement (Herring classification.
    E. Crescent sign
    Answer: D

23. Which of the following is the most common endocrine disorder associated with an increased risk of Slipped Capital Femoral Epiphysis (SCFE.?
    A. Hyperthyroidism
    B. Hypothyroidism
    C. Growth hormone deficiency
    D. Diabetes mellitus
    E. Hyperparathyroidism
    Answer: B

24. Which of the following ultrasound findings is most indicative of a dislocated hip in an infant with suspected Developmental Dysplasia of the Hip (DDH)?
    A. Alpha angle less than 50 degrees
    B. Beta angle greater than 77 degrees
    C. Presence of the Graf Type IIa classification
    D. Femoral head coverage less than 50%
    E. Dynamic instability with the Ortolani maneuver
    Answer: A

25. Which of the following risk factors is considered the strongest independent predictor for the development of Developmental Dysplasia of the Hip (DDH)?
    A. Breech presentation at birth
    B. First-born status
    C. Positive family history of DDH
    D. Female gender
    E. Oligohydramnios during pregnancy
    Answer: A