



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF REHABILITATION MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY

END OF TRIMESTER EXAMINATIONS JANUARY TO APRIL 2025

UNIT CODE: PHT 333

UNIT NAME: Paediatrics

DATE: 11th APRIL 2025

TIME: 6-8.30pm

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.
4. Check that the paper is complete
5. Total number of pages is 6 including the cover.
6. Read through the paper quickly before you start.
7. Upon finishing the exam paper, on submission, the message 'Your examination has been submitted' will appear.

TOTAL: _____/70

PERCENT: _____/100%

POINTS EARNED TOWARDS FINAL GRADE _____/70

Answer all the questions

1. Put the following gross motor milestones in order from earliest to latest age of acquisition.
 - A. Forearm prop --> stands with a wide base of support --> prone pivot --> creeping (quadruped)
 - B. Prone pivot --> Forearm prop --> creeping (quadruped) --> stands with a wide base of support
 - C. Forearm prop --> prone pivot --> creeping (quadruped) --> stands with a wide base of support.

2. Prone prop, or prone on forearms, is a typical motor milestone to see at what age?
 - A. 1 month
 - B. 2 months
 - C. 3 months
 - D. 4 months

3. At what age should we expect to see NO head lag with a pull to sit?
 - A. 0-3 months
 - B. 3.5 - 5 months
 - C. 5.5 - 7 months
 - D. 6-8 months

4. What postural preference do full-term infants typically present with?
 - A. physiologic extension
 - B. crossed extension
 - C. crossed flexion
 - D. physiologic flexion

5. In early quadruped or four-point kneeling, what remains with less ability to coactivate, resulting in the appearance of lordosis?
 - A. shoulder girdle
 - B. hip girdle

- C. trunk
- D. elbow & wrist

6. Reflexes are expected, consistent, involuntary motor reactions in response to specific sensory stimuli, and they may also be referred to as:
 - A. Autonomic
 - B. Sympathetic
 - C. Stereotypical
 - D. Volitional

7. Beginner walkers often exhibit the following:
 - A. upper extremities elevated and abducted, wide base of support, lack of heel strike
 - B. upper extremities close to sides, narrow base of support, lack of heel strike
 - C. upper extremities elevated and adducted, narrow base of support, flat foot at initial contact
 - D. upper extremities close to sides, wide base of support, consistent heel strike

8. APGARs are a quick score of an infant's health at 1 and 5 minutes after birth. The following are assessed in the APGAR.
 - A. Activity, Pulse, Gastrointestinal, Acuity, Reactivity
 - B. Activity, Pulse, Grimace, Appearance, Reactivity
 - C. Appearance, Pulse, Gastrointestinal, Acuity, Respiration
 - D. Activity, Pulse, Grimace, Appearance, Respiration

9. Development occurs in what pattern:
 - A. Cephalocaudal
 - B. caudal to cephalic
 - C. distal to proximal
 - D. there is no typical pattern

10. A child was referred to the clinic due to parental concerns about the child's lack of rolling or sitting. The child was born at 32 weeks gestation on June 12, 2024. weighing 3 pounds and 1 ounces with APGAR scores of 4 and 7 at one and five minutes, respectively. Today (your day of testing) is January 12, 2025. Should you adjust for prematurity?
- A. Yes
 - B. No
11. About how long after babies start to roll without rotation will they start to roll with rotation?
- A. at the same time as the roll without rotation
 - B. 3 months after they roll without rotation
 - C. 5 months after they roll without rotation
 - D. 1 month after they roll without rotation
12. Which of the following is a chronic pulmonary condition caused by abnormal or incomplete lung tissue repair during the neonatal period?
- A. Meconium aspiration syndrome
 - B. Bronchopulmonary dysplasia
 - C. Respiratory distress syndrome
 - D. Persistent pulmonary hypertension of the newborn
13. What is the ideal behavioral state to interact with an infant in the NICU?
- A. Active Awake
 - B. Drowsy
 - C. Quiet awake
 - D. Light sleep
14. Plagiocephaly may be described as
- A. Flattening and widening of the posterior aspect of the skull
 - B. Flattening of one occiput
 - C. Long and narrow skull
 - D. Fusion of cranial sutures

15. Samuel is a 3 month old male who presents to physical therapy. Upon examination you note that Samuel has INCREASED left lateral cervical flexion and INCREASED right cervical rotation. His mother reports she often lays him in a crib or supportive device throughout the day. She is nervous to place him in prone because he cries. What does he present with and what is he most at risk of developing?
- A. Right sided torticollis, at risk for right sided plagiocephaly
 - B. Right sided torticollis, at risk for left sided plagiocephaly
 - C. Left sided torticollis, at risk for right sided plagiocephaly
 - D. Left sided torticollis, at risk for left sided plagiocephaly
16. All of the following are common sequelae (resultant problems) following preterm birth EXCEPT
- A. Intraventricular hemorrhage (IVH)
 - B. Bronchopulmonary dysplasia (BPD)
 - C. Trisomy 21 (Down syndrome)
 - D. Cerebral palsy (CP)
17. A physiotherapist is working with a 26-month-old child diagnosed with CP at age 20 months. The child can sit independently but does not pull to stand independently. She plays with toys like her two-year-old cousin but rolls on the floor to get to different toys. When held in standing, she tends to keep her legs stiff and crosses them like scissors with her hips adducted and internally rotated. Her legs are significantly more involved than her arms, and she uses her arms for functional tasks with greater ease than her legs. The child's mother tells the physical therapist that she heard that children with CP have brain damage and asks if this brain damage will get worse over time. The most appropriate response to the mother's concern would be:
- A. CP is an inherited genetic disorder that directly affects muscle
 - B. CP results from brain damage that does not change over time, and the signs that the child demonstrates now will also not change over time.

- C. Children with CP have non-progressive damage or disturbance to the brain, although secondary changes in the musculoskeletal system may progress over time.
- D. Children with CP have progressive brain damage that worsens over time and results in increased musculoskeletal changes over time.

18. Using the case description above, based on the extent and location of limb involvement, what type of CP does the child most likely demonstrate?

- A. Diplegia
- B. Hemiplegia
- C. Monoplegia
- D. Quadriplegia

19. Please put the following first-year milestones in the order you would expect to see them: taking three independent steps; reaching and grabbing for objects in supine; sitting with upper extremity support (prop sitting); crawling on the belly.

- A. Prop sitting; crawling on belly; reaching and grabbing for objects in supine; taking three independent steps.
- B. Reaching and grabbing for objects in supine, prop sitting, crawling on the belly, taking three independent steps.
- C. Reaching and grabbing for objects in supine, crawling on the belly, prop sitting, taking three independent steps.
- D. Prop sitting; reaching and grabbing for objects in supine; crawling on belly; taking three independent steps.

20. You are treating a child with CP who uses forearm crutches for mobility at home and in the school. If the family is going on longer walking outings in the community, the child will elect to use their manual wheelchair, which they can self-propel. What level is this child on the GMFCS?

- A. GMFCS Level I
- B. GMFCS Level II
- C. GMFCS Level III

- D. GMFCS Level IV
- E. GMFCS Level V

21. You are taking the subjective history for a 1.5-year-old child at the initial evaluation, and the mother reports that the child has difficulty moving her left lower extremity and that she already seems to be right-hand dominant because she barely uses her left hand during play. You suspect cerebral palsy (CP), and you know that, developmentally, she should not be showing hand dominance yet. What is the best way to describe her type of CP?

- A. Spastic diplegia
- B. Hemiplegia
- C. Tetraplegia
- D. Paraplegia

22. Which type of CP involves the motor cortex primarily?

- A. Dyskinetic
- B. Ataxic
- C. Hypotonic
- D. Spastic

23. Which type of CP involves an insult to the basal ganglia and has athetosis (athetoid) and dystonic subtypes?

- A. Dyskinetic
- B. Ataxic
- C. Hypotonic
- D. Spastic

24. Interventions for individuals with CP should be all of the following EXCEPT:

- A. Focused on passive stretching
- B. Goal-oriented and activity-focused
- C. Child-focused
- D. Task and context-focused

25. You place your patient with CP in hook lying (on their back with their knees bent and feet flat on the exam surface). You note that their left knee is higher than the right knee, this indicates what?
- A. Positive Ortolani sign, hip instability is present on the left
 - B. Positive Galeazzi sign, hip instability is present on the left
 - C. Positive Ortolani sign, hip instability is present on the right
 - D. Positive Galeazzi sign, hip instability is present on the right
26. A 3-year-old child with Down syndrome arrives with his mother at his regular weekly appointment with you in an outpatient clinic. Mom reports that the patient had a hard, forward fall earlier that morning, and since then, he has been a little off balance and has not wanted to move his head. As the patient walks around the waiting room, he seems slightly clumsy and off balance than usual. What would you recommend for this child based on the mom's and your observations?
- A. Cancel his session and send him to urgent care to assess his cervical spine for impingement.
 - B. Work on balance training activities to address his clumsiness
 - C. Perform soft tissue mobilization to the cervical region
 - D. Educate the mom on guarding techniques to prevent the child from falling again.
27. Individuals with Trisomy 21 (Down Syndrome) will often present with which of the following cluster of symptoms?
- A. Low muscle tone, cognitive delay, hyperreflexia, ligamentous laxity, average strength and endurance
 - B. Cognitive delay, hypotonia, ligamentous laxity, decreased strength and endurance, insufficient balance reactions.
 - C. Increased muscle tone, hyperreflexia, decreased strength and endurance, and average cognitive function.

D. Average cognitive function, decreased strength and endurance, ligamentous laxity, hypotonia.

28. Which distinctive examination sign may be associated with Duchenne Muscular Dystrophy (DMD) diagnosis?

- A. Babinski's Reflex
- B. Clonus
- C. Gower's Sign
- D. Homan's Sign

29. What muscles are weak in a patient who demonstrates head lag with pull to sit?

- A. Deep neck flexors, abdominals, biceps
- B. Abdominals, biceps, gluteus maximus
- C. Deep neck flexors, scapular retractors, hip flexors
- D. Abdominals, scapular retractors, gluteus maximus

30. Which of the following accurately describes arthrogyriposis?

- A. The presence of non-progressive contractures in 2 or more body areas in individuals with typically average to above-average intelligence
- B. The presence of contractures in the lower extremities that may be progressive in individuals with below-average intelligence
- C. The presence of contractures in the upper extremities in individuals who often have above-average intelligence
- D. Presence of contractures in 2 or more body areas and does not typically include club feet in the presentation

31. All of the following should be avoided in those with hemophilia EXCEPT

- A. NSAIDs/aspirin
- B. impact sports and activities
- C. continuous/pulsed ultrasound
- D. ice

E. strengthening programs

32. A patient with juvenile idiopathic arthritis presents to your clinic with reports of multi-joint pain that is worse in the mornings, a rash, and high fevers. What type of JIA is this patient most likely to have?

A. Systemic

B. Oligoarticular

C. Polyarticular

D. Enthesitis

E. Undifferentiated

33. Defective development of the spinal cord in which skin is covering the defect and the defect contains membranes and/or nonfunctional nerves that end in the sac is referred to as what?

A. Myeloschisis

B. Meningocele

C. Myelomeningocele

D. Spina bifida occulta

ANSWER B

34. Duchenne muscular dystrophy involves:

A. Proximal muscle weakness more than distal muscle weakness

B. Distal muscle weakness more than proximal muscle weakness

C. Hyperlaxity of joints and infrequent development of contractures

D. Spasticity of the gastroc-soleus

35. Interventions for individuals with Duchenne Muscular Dystrophy should focus on:

A. Eccentric training for improved strengthening

B. High-impact training to assist with bone density

C. Slow, moderate resistance training to reduce mechanical strain.

D. Avoidance of swimming and bicycling due to poor endurance

36. A child comes to your clinic with impairments in motor skills that affect their ability to interact with their peers and environment despite multiple practice opportunities. Parents note they seem rather clumsy and have difficulty attending to a task and have always been that way. They are currently also in speech therapy. Parents have NOT noticed the child performing repetitive tasks or behaviors. They note that their child can play well with their siblings but is often shy with peers as they are self-conscious of difficulty keeping up with them. You do not notice any overt musculoskeletal abnormalities. What is the most likely diagnosis for this child?

- A. Autism spectrum disorder
- B. Developmental coordination disorder
- C. Duchenne muscular dystrophy
- D. Down syndrome

37. Individuals with osteogenesis imperfecta should receive physical therapy to:

- A. Complete high load, high impact training to assist with bone density
- B. Complete vibration plate as research has shown this to be an effective method of increasing bone density
- C. Learn techniques for positioning, joint protection, and energy conservation
- D. Educate parents and patients on preferred movements like: bridges, diagonal trunk rotation, and use of baby walkers and jumpers

38. Goals derived from the ICF model should be:

- A. Participation-based and functional
- B. Medical diagnosis based
- C. Based on personal and environmental factors

D. Body structure and function-based

39. A 7-year-old child with cerebral palsy has difficulty with fine motor control for writing tasks in school. According to the ICF model, this would primarily be classified as:

- A. A health condition
- B. A body function impairment
- C. An activity limitation
- D. A participation restriction
- E. An environmental factor

40. Which of the following is the best example of a SMART, participation-based goal using the ICF framework for a 5-year-old with developmental coordination disorder?

- A. Improve gross motor skills in 6 weeks
- B. The child will increase strength by 20% in 4 weeks
- C. The child will independently participate in 15 minutes of playground activities with peers during break time 4/5 days by the end of the school term
- D. Decrease tone in lower extremities
- E. Improve balance during all activities

41. A pediatric physiotherapist is working with a 10-year-old child with spina bifida who uses a wheelchair. The child's parents report that their apartment building has no lift, creating a barrier to their ability to play with neighborhood friends. This factor would best be categorized as:

- A. A body structure impairment
- B. A personal factor
- C. An environmental factor
- D. An activity limitation
- E. A health condition.

42. When developing an ICF-based treatment plan for a 12-year-old with juvenile idiopathic arthritis, which of the following would be considered a personal factor that might influence outcomes?

- A. Joint inflammation
- B. The child's motivation and interest in sports

C. School accessibility features

D. Range of motion limitations

E. Availability of adaptive equipment

43. An 8-year-old with Down syndrome has difficulty participating in gym class due to low muscle tone and decreased endurance. Using the ICF model, which components would be most directly addressed by implementing a peer buddy system in the classroom?

A. Health condition and body structures

B. Body functions and personal factors

C. Activity limitations and health condition

D. Environmental factors and participation

E. Body structures and activity limitations

44. Below are examples of commonly used pediatric outcome measures, EXCEPT

A. Alberta Infant Motor Scales (AIMS)

B. Peabody Developmental Motor Scales (PDMS)

C. Bruininks-Oseretsky Test of Motor Proficiency (BOT-2)

D. Berg Balance Scale (BBS)

45. The following statements apply to the Alberta Infant Motor Scale, EXCEPT

A. It can be used for ages 0-18 months

B. Assesses posture movements in infant population in all developmental positions

C. It is a criterion-referenced scale

D. Scored by the presence or absence of a skill

46. During which gestational week does hyaline cartilage first appear in fetal development?

A. Week 3

B. Week 5

C. Week 7

D. Week 10

47. Which of the following best describes why the skeleton is most vulnerable to deformity in the first few years of life?
- A. Bones are fully ossified but highly malleable.
 - B. The nervous system is not fully developed
 - C. Children's bones are approximately 40% less stiff than adults
 - D. Growth hormone production is at its highest
48. How many weight shifts and loading events do infants who are standing and early walking typically experience per waking hour?
- A. 50-100
 - B. 100-300
 - C. 300-500
 - D. 500-1500
49. Which of the following is NOT typically established through movement during skeletal development?
- A. Bone and limb length
 - B. Tendon and ligament attachment sites
 - C. Spinal and limb alignment
 - D. Neurological pathway formation
50. A child with cerebral palsy demonstrates altered muscle tone and impaired motor control. According to skeletal modeling principles, what secondary condition is most likely to develop if not addressed through intervention?
- A. Osteoporosis
 - B. Joint hypermobility
 - C. Biomechanical misalignment
 - D. Increased bone density