



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 333

UNIT NAME: PEDIATRICS PHYSIOTHERAPY

DATE: 9TH APRIL 2024

TIME: 6PM-8PM

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 17 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

1. 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

2. All of the following should be avoided in those with hemophilia EXCEPT
 - a. NSAIDs/asprin
 - b. impact sports and activities
 - c. continuous/pulsed ultrasound
 - d. ice
 - e. strengthening programs

3. 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, average cognitive function
 - d. average cognitive function, decreased strength and endurance, ligamentous laxity, hypotonia

4. 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
5. 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
6. Arthrogryposis presents as
- 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. the presence of contractures in 2 or more body areas and does not typically include club feet in the presentation
7. All of the following must be present for a diagnosis of Autism Spectrum Disorder (ASD) EXCEPT
- a. restrictive and repetitive behaviors
 - b. difficulties in social interactions
 - c. attention difficulties
 - d. symptoms present themselves in early childhood
8. A child comes to your clinic who presents with impairments in motor skills that affects their ability to interact with their peers and environment despite multiple opportunities for practice. Parents note they seem rather clumsy and have a difficult time 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 is able to play well with their siblings, but is often shy with peers as they are self-conscious of their difficulty keeping up with their peers. 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
9. Which type of CP involves the motor cortex primarily?
- a. Dyskinetic
 - b. Ataxic
 - c. Hypotonic
 - d. Spastic
10. You are treating a 30 month old with CP. Her parents want to know if you think she will ever be able to walk. Regarding her developmental milestones, she achieved head control at 6 months, rolled at 14 months, and achieved independent sitting at 20 months. What is your best prediction?
- a. It is more likely that the child will be able to walk in some fashion (though may require an assistive device) based on the ages that they achieved head control, rolling, and independent sitting.
 - b. It is unlikely that the child will be able to walk based on the ages that they achieved head control, rolling, and independent sitting, as these are significantly delayed
 - c. You are unable to tell and will have to wait and see
 - d. You need to know the type of CP in order to best answer this question
11. 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
12. You place your patient with CP in hooking (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
13. Put the following gross motor milestones in order from earliest to latest age of acquisition
- a. Forearm prop --> stands with wide base of support --> prone pivot --> creeping (quadruped)
 - b. Prone pivot --> Forearm prop --> creeping (quadruped) --> stands with wide base of support
 - c. Forearm prop --> prone pivot --> creeping (quadruped) --> stands with wide base of support
14. 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
15. Full term infants typically present with what postural preference?
- a. physiologic extension
 - b. crossed extension
 - c. crossed flexion
 - d. physiologic flexion

16. In the eight to nine month range, a significant increase in weight shifts allows for increased mobility in multiple developmental positions.
- True
 - False
17. Early walking is often characterized by:
- upper extremities elevated and abducted, wide base of support, lack of heel strike
 - upper extremities close to sides, narrow base of support, lack of heel strike
 - upper extremities elevated and adducted, narrow base of support, flat foot at initial contact
 - upper extremities close to sides, wide base of support, consistent heel strike
18. Serious health consequences are often associated with low birth weight
- True
 - False
19. APGARs are a quick score of an infant's health at 1 and 5 minutes after birth. The following are assessed in the APGAR
- Activity, Pulse, Gastrointestinal, Acuity, Reactivity
 - Activity, Pulse, Grimace, Appearance, Reactivity
 - Appearance, Pulse, Gastrointestinal, Acuity, Respiration
 - Activity, Pulse, Grimace, Appearance, Respiration
20. What group of skills tend to develop around the same age?
- Reciprocal crawling, prone on extended arms, rolling with rotation, sitting with support
 - Reciprocal crawling, rolling with rotation, sitting reach with rotation, four point kneeling
 - Reciprocal crawling, rolling with rotation, early stepping, stands alone

21. A child was referred to the program due to parental concerns about the child's lack of rolling or sitting. The child was born at 32 weeks gestation on June 12, 2021. weighing 3 pounds, 1 ounces with APGAR scores of 4 and 7 at one and five minutes respectively. Today (your day of testing) is January 12, 2022. Should you adjust for prematurity?
- Yes
 - No
22. A child was referred to the program due to parental concerns about the child's lack of rolling or sitting. The child was born at 32 weeks gestation on June 12, 2021. weighing 3 pounds, 1 ounces with APGAR scores of 4 and 7 at one and five minutes respectively. Today (your day of testing) is January 12, 2022. What is the "Correction Factor" or "Prematurity" of the infant?
- 1 month (4 weeks) premature
 - 2 months (8 weeks) premature
 - 3 months (12 weeks) premature
 - 4 months (16 weeks) premature
23. A child was referred to the program due to parental concerns about the child's lack of rolling or sitting. The child was born at 32 weeks gestation on June 12, 2021. weighing 3 pounds, 1 ounces with APGAR scores of 4 and 7 at one and five minutes respectively. Today (your day of testing) is January 12, 2022. What is the infant's ADJUSTED age?
- 2 months
 - 4 months
 - 5 months
 - 7 months
24. About how long after babies start to roll without rotation will they start to roll with rotation?
- at the same time as the roll without rotation
 - 3 months after they roll without rotation

- c. 5 months after they roll without rotation
 - d. 1 month after they roll without rotation
25. You are assessing a baby that is 10 months old. Would it be normal to see the presence of positive Babinski reflex test?
- a. Yes
 - b. No
26. Reflexes are replaced by volitional or voluntary movement patterns as the central nervous system matures
- a. True
 - b. False
27. Indicators of stress in an infant include:
- a. hiccuping, yawning, arching, reflux
 - b. yawning, cooing, hands to midline, arching
 - c. gaze aversion, smooth body movements, arching, reflux
 - d. smooth body movements, cooing, relaxed, hiccuping
28. Which of the following is most commonly seen in infants that are born at term or post-term?
- a. Bronchopulmonary Dysplasia
 - b. Meconium aspiration syndrome
 - c. Respiratory distress syndrome
 - d. Tetralogy of Fallot
29. Which of the following is a chronic pulmonary condition caused by abnormal or incomplete repair of lung tissue during the neonatal period?
- a. Meconium aspiration syndrome
 - b. Bronchopulmonary dysplasia
 - c. Respiratory distress syndrome

- d. Persistent pulmonary hypertension of the newborn
30. Which of the following is the leading known cause of spastic diplegic cerebral palsy and cognitive impairments in premature infants?
- a. intraventricular hemorrhage
 - b. neonatal seizures
 - c. respiratory distress syndrome
 - d. periventricular leukomalacia
31. What is the ideal behavioral state in which to interact with an infant in the NICU?
- a. Active Awake
 - b. Drowsy
 - c. Quiet awake
 - d. Light sleep
32. Upper trunk control is typically seen in what age window?
- a. 0-1 month
 - b. 3-4 months
 - c. 6-8 months
 - d. 9-12 months
33. Newborns will present with which of the following?
- a. decreased thigh foot angle, increased genu valgum, decreased intercondylar distance, decreased intermalleolar distance
 - b. decreased thigh foot angle, increased genu varum, increased intercondylar distance, decreased intermalleolar distance

- c. increased thigh foot angle, increased genu valgum, decreased intercondylar distance, increased intermalleolar distance
- d. increased thigh foot angle, increased genu varum, decreased intercondylar distance, decreased intermalleolar distance

34. 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

Use the following text for questions 35 & 36:

An early intervention physical therapist is working with a 26 month old child diagnosed with CP at age 20 months. The child is able to sit independently, but does not pull to stand independently. She plays with toys and blocks like her two year old cousin, but she rolls on the floor to get to different toys. When held in standing, she tends to keep her legs very stiff and crosses them like a pair of 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.

35. 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.
36. 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
37. 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 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 belly; taking three independent steps
 - c. Reaching and grabbing for objects in supine; crawling on belly; prop sitting; taking three independent steps
 - d. Prop sitting; reaching and grabbing for objects in supine; crawling on belly; taking three independent steps
38. Emily presents to physical therapy at 3 weeks of age with the following impairments: Decreased activation of deltoid, levator scapulae, serratus anterior, supraspinatus, infraspinatus, biceps brachii, wrist and finger extensors, and supinator muscles on her right side (resulting in Shoulder adduction, internal rotation, elbow extension, wrist and finger flexion). Mother reports decreased active range of motion of the right arm and

notices that she does not seem to respond to tactile stimulation of that right upper extremity. She has full and intact ROM and strength of bilateral lower extremities. What is her most likely diagnosis?

- a. Klumpke Palsy
- b. Spastic diplegia
- c. Erb Palsy
- d. Hemiplegic CP

39. 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

40. Ella is a 4 year old who presents to physical therapy for idiopathic toe walking. When taking a history you ensure that you ask if she meets the inclusion criteria. The inclusion criteria for idiopathic toe walking include all of the following EXCEPT:

- a. The onset of toe walking occurred within 6 months of initiation of walking
- b. The patient demonstrates toe walking on at least one of the two lower extremities
- c. The toe walking is habitual and demonstrated in a predominance of gait patterns
- d. Is diagnosed between 2 and 21 years of age

41. 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 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?
- Spastic diplegia
 - Hemiplegia
 - Tetraplegia
 - Paraplegia
42. Annie was born with a brachial plexus injury due to tractioning of her shoulder during delivery for an extended time. The physicians have diagnosed her with a brachial plexus injury that primarily affects the axillary nerve affecting her deltoid. The physicians describe the injury as **axonotmesis**. What is her most likely prognosis?
- There is complete axonal rupture. There is an unlikely regeneration of the nerve
 - The neural sheath remained intact with disruption of internal elements. She may have some recovery in 4-5 months up to 2 years
 - This is a temporary nerve conduction block. She should experience complete recovery as the edema resolves within days
 - The neural sheath remained intact with disruption of internal elements. She may have some recovery in 7-9 months up to 4 years
43. Club foot is treated with all of the following EXCEPT
- Progressive foot casting
 - Percutaneous Achilles tendon release
 - Foot orthosis into dorsiflexion and foot ABDuction
 - Foot orthosis into plantarflexion and ADDuction

44. You are visiting your sister who just had her baby notice the following joint alignment in her baby: increased (20 degrees) medial tibial torsion, genu varum, hip flexion contracture of 20 degrees, and excessive ankle plantar flexion of 50 degrees with inversion. Based on that observation you conclude the following:
- This is a typical presentation for a child of this age based on expected joint contractures at birth
 - There is a concern regarding the hip flexion contracture that needs to be addressed with physical therapy
 - There is a concern for the medial tibial torsion that needs to be addressed with physical therapy
 - There is a concern for the ankle plantar flexion with inversion that needs to be addressed with physical therapy
45. A 3-year-old child with Down syndrome arrives with his mother to 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 been wanting to move his head. As the patient is walking around the waiting room, you notice that he seems a little more clumsy and off balance than usual. Based on mom's and your own observations, what would you recommend for this child.
- Cancel his session and send him to urgent care to assess his cervical spine for impingement
 - Work on balance training activities to address his clumsiness
 - Perform soft tissue mobilization to cervical region
 - Educate mom on guarding techniques to prevent the child from falling again.

46. Which distinctive examination sign may be associated with the diagnosis of Duchenne Muscular Dystrophy (DMD)?
- Babinski's Reflex
 - Clonus
 - Gower's Sign
 - Homan's Sign
47. What muscles are weak in a patient who demonstrates head lag with pull to sit?
- Deep neck flexors, abdominals, biceps
 - Abdominals, biceps, gluteus maximus
 - Deep neck flexors, scapular retractors, hip flexors
 - Abdominals, scapular retractors, gluteus maximus
48. A 10-year old child walks into the PT clinic with a limp. The BMI (body mass index) is 30 (obese). There is no history of recent fever, swelling, or traumatic event. Pain limits AROM of hip abduction and medial rotation. Groin pain refers to the anteromedial thigh and knee. What is the most probable diagnosis associated with these signs and symptoms?
- Legg Calve Perthes Disease
 - Osteochondritis Dissecans
 - Sever's Disease
 - Slipped Capital Femoral Epiphysis
49. What is one of the **BEST** predictors of recovery of an infantile/obstetrical brachial plexus injury by 1 year of age?
- Active arm and hand movement at 3 months of age

- b. Good head/neck control by 4 months of age
 - c. Appropriate visual tracking by 2 months of age
 - d. Integration of the ATNR reflex by 4 months of age
50. A 7-year old child walks into the PT clinic with a limp on the left lower extremity. The parents report a recent history of a respiratory infection, current fever, no report of traumatic event, and normal leukocyte count. The child reports pain in the left hip. Based on this information, what would you hypothesize is the root cause of the limp?
- a. Septic Arthritis
 - b. Osteomyelitis
 - c. Transient Synovitis
 - d. Legg Calve Perthes