



## SECTION A

### PART I - Multiple Choice Questions (30 Marks)

Choose the correct answer and write down the letter of the correct answer chosen in the Answer Booklet against the question number. E.g. 31 (c). Each question carries ONE mark. Any double writing, smudgy answers or writing more than one choice shall not be evaluated.

1. Loss of ability to correctly carry out certain movements in response to stimuli that normally elicit them, in the absence of weakness, other motor disorder or sensory loss is called:
  - a. Agnosia
  - b. Apraxia
  - c. Alexia
  - d. Anopia
  
2. O'Donoghue's unhappy triad comprises of injuries of:
  - a. Lateral meniscus, lateral collateral ligament and PCL
  - b. Lateral meniscus, lateral collateral ligament and ACL
  - c. Medial meniscus, medial collateral ligament and PCL
  - d. Medial meniscus, medial collateral ligament and ACL
  
3. Reflex contraction of detrusor muscle in response to bladder filling is known as:
  - a. Vesical reflex
  - b. Micturation
  - c. Visceral reflex
  - d. Autonomic reflex
  
4. Lesion of the dorsal root of the sacral segments interrupt afferent reflex fibers and produce\_\_\_\_\_bladder
  - a. Atonic
  - b. Reflexive
  - c. Spastic
  - d. Automatic
  
5. A child with cerebral palsy who can walks indoor and outdoor on a level surface with an assistive device and may climb stairs holding onto a railing would be classified by using GMFCS(Gross Motor Function Classification System) as:
  - a. Level I
  - b. Level II
  - c. Level III
  - d. Level IV
  
6. All of the following are the most common causes of midfoot pain EXCEPT:
  - a. Navicular stress fracture
  - b. Extensor tendinopathy
  - c. Peroneal tendinopathy
  - d. Lisfranc's joint injuries

7. A dynamic form of exercise that is carried out against a constant or variable load as muscle lengthens or shortens through the available range of motion:
  - a. Isotonic exercise
  - b. Isokinetic exercise
  - c. Isometric exercise
  - d. Plyometric exercise
  
8. The major source of energy during the first 30 seconds of intense exercise is provided through:
  - a. The aerobic system
  - b. The anaerobic glycolytic system
  - c. The ADP-PC system
  - d. The ATP-PC system
  
9. Which of the following statement is FALSE regarding spondylolisthesis at L5-S1?
  - a. Must treat with flexion principle
  - b. Must treat with extension principle
  - c. Could result in spinal stenosis
  - d. Forward displacement of superior vertebrae over the inferior vertebrae
  
10. A score of 3 for verbal response corresponds to which response in Glasgow Coma Scale?
  - a. Incomprehensible sound
  - b. Confused, disoriented words
  - c. Makes no sound
  - d. Utters inappropriate words
  
11. All of the following are the isotonic regimens EXCEPT:
  - a. Velocity spectrum rehabilitation
  - b. DeLorme's technique
  - c. Oxford technique
  - d. Plyometric training
  
12. All of the following are the deconditioning effects associated with bed rest EXCEPT:
  - a. Decreased strength
  - b. Decreased total blood volume
  - c. Increased plasma volume
  - d. Decreased orthostatic tolerance
  
13. The formula for calculating 'maximum heart rate' is:
  - a. 120 minus age
  - b. 180 minus age
  - c. 200 minus age
  - d. 220 minus age
  
14. The following are the forces acting on the wall of the lungs EXCEPT:
  - a. Negative intra-pleural pressure
  - b. Positive intra-pleural pressure
  - c. Surface tension
  - d. Recoiling force of the lung

15. Ponseti Method is commonly practiced to
- Treat congenital hip dislocation
  - Treat clubfoot
  - Treat shoulder dislocation
  - Treat Legg- Perthes disease
16. The motions that occurs between the joint surfaces as well as the distensibility or 'give' in the joint capsule, which allow the bones to move is called:
- Joint play
  - Joint traction
  - Component motion
  - Physiologic movement
17. In a SD curve, chronaxie is the:
- Minimal stimulus strength that produce a response
  - Stimulus duration that produce a response
  - The minimal stimulus strength that produce a response when the stimulus duration is set to double the rheobase
  - The minimal stimulus duration that produce a response when the stimulus strength is set to double the rheobase
18. Physiologic bowing of legs start to disappear around
- 9 months
  - 12 months
  - 15 months
  - 18 months
19. Jobe's test is the special test for:
- Subscapularis
  - Infraspinatus
  - Supraspinatus
  - Teres minor
20. \_\_\_\_\_ muscle originates from transverse process of C7 and T1, and inserts into medial border of scapula.
- Levator scapulae
  - Latissimus dorsi
  - Rhomboid major
  - Rhomboid minor
21. Which spinal brace is exclusively used to prevent kyphosis?
- Milwaukee brace
  - Jewett brace
  - Taylor brace
  - Knight Taylor brace

22. Terry Thomas sign in radiograph is seen in \_\_\_\_\_
- Scapho-lunate dissociation
  - Scaphoid waist fracture
  - AVN of lunate
  - Carpal tunnel syndrome
23. The following are the poor prognostic features after stroke EXCEPT:
- Drowsiness
  - Aphasia
  - Hypertension soon after stroke
  - Swallowing difficulty
24. Autonomic dysreflexia may occur in SCI patients with a lesion at:
- C7 and above
  - Below T6
  - T6 and above
  - Conus medularis
25. 'Night stick fracture is a fracture of:
- Shaft of radius
  - Shaft of tibia
  - Shaft of fibula
  - Shaft of ulna
26. A layer of epidermis that is water repellent and sheds:
- Stratum spinosum
  - Stratum corneum
  - Stratum lucidum
  - Stratum granulosum
27. Which of the following statement is FALSE regarding pressure/ pressure garment therapy for burns?
- If healed before 2 weeks- no pressure garment
  - If healed after 3 weeks – put in pressure garments
  - If healed but re-opens due to infection- no pressure garment
  - If wound is on lower leg or foot- put in pressure garments
28. A manipulation in which the soft tissues (mainly muscles) are compressed either against underlying bone or against themselves:
- Petrissage
  - Effleurage
  - Stroking
  - Tapotement
29. Which of the following is true?
- Development and growth are synonyms.
  - Preference for using the left or right hand is an important determinant of a child's cognitive development

- c. Bilingual children start to speak later than monolinguals
  - d. Speech and language are synonyms
30. The pull of the vastus lateralis muscle lateral to the long axis of femurs is normally \_\_\_\_\_ degrees
- a. 5-10
  - b. 12-15
  - c. 15-18
  - d. 50-55

**PART – II : Short Answer Questions (20 marks)**

**Answer ALL the questions. Each question carries 5 marks.**

1. How would you elicit normal equilibrium reaction in sitting and what would be the normal reaction to it?
2. What is neurophysiological facilitation of respiration? Explain 3 neurophysiological facilitatory stimuli.
3. Describe circle of Willis and its distribution.
4. Define and describe the pathomechanics and clinical features of adhesive capsulitis. Mention four physiotherapy management.

## **SECTION B**

### **Case Study**

**Choose either Case 1 or Case 2 from this Section. Each Case carries 50 marks. Mark for each sub-question is indicated in the brackets.**

#### **CASE 1**

Lhamo is a 50 year old woman who is admitted in the hospital with infected leg following a trauma. The wound extends few centimeters below her left knee to the foot. The wound smells pretty bad with purulent exudates though she can actively move her toes. The surgeons think she should undergo an amputation but Lhamo is confused. Her sons and daughters are annoyed principally for two reasons; She was not referred on time from the district hospital and after she arrived the referral hospital, the concerned surgeons only saw her after two days. So the family believes there was a gross negligence on part of the health workers.

#### **Answer all questions**

- a. Why do you think the surgeons are planning to amputate Lhamo's leg? Mention 5 indications for amputation. (5marks)
- b. Lhamo is confused. How can you help her understand and agree to the surgery? (2 marks)
- c. What level is the common site for amputation? What is the percentage of energy cost with below knee amputation? (2 marks)
- d. Above knee residual limb always tend to go into flexion and abduction deformity. Explain briefly the patho-mechanics (muscle work) of this deformity. How will you prevent this deformity? (5 marks)
- e. Mention 5 pre-operative programs for Lhamo. Which component of lung functions will you look to improve? (5 marks)
- f. Briefly describe your management of Lhamo and her below knee stump for first few days after the surgery. (5 marks)
- g. Mention 5 characteristics of an ideal stump. (5 marks)
- h. List down the important crutch muscle and describe a progressive ambulation training program for Lhamo. (5 marks)
- i. Which muscle is responsible for pushing the body forward during crutch ambulation? During crutch ambulation patient has the tendency to hold the residual limb in which position? (2 marks)
- j. Mention 5 specific stump exercises for Lhamo who will have below knee amputation of her left leg. (5 marks)
- k. What prosthesis will Lhamo get? Describe in brief the comprehensive pre-prosthetic and prosthetic assessment and physiotherapy program for Lhamo. (7 marks)
- l. How do you think there was negligence on part of health workers? Where will you direct the patient party for appraisal? (2 marks)

## **CASE 2**

Chencho is a 35 year old man, who was involved in a road traffic accident. Neuro-surgeon had performed an emergency left parietal craniotomy. You are seeing him in the ICU on first postoperative day. He is breathing with the help of a ventilator. His GCS is 8/15 and his cognitive function is at Level II on Rancho Los Amigos Scale.

### **Answer all questions**

- a. Mention 5 observations you will make before you touch Chencho and why? (5 marks)
- b. Explain Glassgow Coma Scale. (5 marks)
- c. Mention 5 anticipated problems and their prevention for Chencho. (5 marks)
- d. Explain RLA scale. (5 marks)
- e. Write brief assessment, what type of impairments including his speech do you expect from Chencho's injury. (5 marks)
- f. Mention progressive mobility programs to stimulate Chencho's body system. (5 marks)
- g. Mention progressive steps to rehabilitate Chencho after he gets out the ICU. (5 marks)
- h. What is high repetition-high intensity exercise? Mention some high intensity-high repetition exercise program for Chencho in Acute rehabilitation. (5 marks)
- i. Chencho might develop right hemiplegia. Describe this deformity at various joints. (5 marks)
- j. Give Chencho and his family members 5 home exercise and educational programs. (5 marks)