CIVIL SERVICE COMMON EXAMINATION (CSCE) 2009
EXAMINATION CATEGORY: TECHNICAL

PAPER III: BACHELOR OF PHYSIOTHERAPY

Date : 8th November 2009
Total Marks : 100
Examination Time : 2.5 hours
Reading Time : 10 minutes

Register Number: …….

This paper consists of two sections:

Section A; Part 1: Multiple choice questions
Part 2: Short answers

Section B; Case study

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TECHINICAL GRADUATE

PAPER III: BACHELOR OF PHYSIOTHERAPY

Section A

Part 1**: Multiple choice questions**
Choose the most appropriate answer in the answer sheet provided. (1x30=30)

1. All of the following statements concerning the cerebellum are correct EXCEPT
    a. found in the posterior cranial fossa
    b. has three lobes
    c. part of the brain stem
    d. has a tonsil

2. All of the following principles/techniques are used in the management of low back pain syndrome EXCEPT
    a. McKenzie Exercise
    b. Frenkel's Exercise
    c. William's Exercise
    d. Mulligan's Technique

3. In ASIA Impairment scale, sensory but no motor function is preserved below the neurological level and more than half the key muscles below the neurological level has a muscle grade less than 3 is classified as
    a. C-Incomplete
    b. A-Complete
    c. C-Complete
    d. D-Incomplete

4. The anteroposterior diameter of thorax is increased by
    a. descent of the diaphragm
    b. bucket handle movement
    c. pump handle movement
    d. none of the above

5. Bennet's fracture is a fracture of the base of
    a. first metatarsal
    b. fifth metacarpal
    c. first metacarpal
    d. fifth metatarsal

6. The basal ganglia includes all of the following structures EXCEPT
    a. nucleus fastigii
    b. caudate nucleus
    c. putamen
    d. globus pallidus

7. Destruction of the ventral horn results in all of the following deficits EXCEPT
    a. flaccid paralysis
    b. loss of muscle stretch reflexes
    c. loss of muscle bulk
    d. Babinski sign

8. Ipsilateral loss of position and vibration sensation with spastic paresis below the level of lesion and contralateral loss of pain and temperature sensation one segment below the lesion is the feature of
    a. Brown-sequard syndrome
    b. Cauda equana syndrome
    c. tethered cord syndrome
    d. posterior cord syndrome

9. Babinski sign is the only neurologic sign that clearly can be attributed to lesion of the
    a. rubrospinal tract
    b. reticulospinal tract
    c. corticospinal tract
    d. vestibulospinal tract

10. Hold-relax is a relaxation technique based upon
    a. maximal resistance of an isotonic contraction
    b. maximal resistance of an isometric contraction
    c. progressive resistance of an isotonic contraction
    d. minimal resistance of an isometric contraction

11. A patient stands on a low stool, jumps of the stool, and than quickly jumps back on the stool is an example of
    a. circuit weight training
    b. DeLorme's technique
    c. plyometric training
    d. Oxford training

12. The normal values of ABGs are
    a. PaO_2 ->80mmHg, $PaCO_2$-35-45mmHg, pH-7.35-7.45, HCO_3 -22-28mEq/liter
    b. PaO_2 ->80mmHg, $PaCO_2$-45-50mmHg, pH-7.35-7.45, HCO_3 -22-28mEq/liter
    c. PaO_2 ->80mmHg, $PaCO_2$-35-45mmHg, pH-7.35-7.45, HCO_3 -30-35mEq/liter
    d. PaO_2 ->80mmHg, $PaCO_2$-35-45mmHg, pH-5.5-6.5, HCO_3 -22-28mEq/liter

13. All of the following are restrictive pulmonary conditions EXCEPT
    a. ARDS
    b. pneumonia
    c. pulmonary embolism
    d. Cystic fibrosis

14. The root value of musculocuteneous nerve are
    a. C6,7,8
    b. C5,6,7
    c. C5,6
    d. C6,7,8,T1

15. Ptosis, miosis, enopthalmous and anhydrosis may be associated with
    a. Erb's palsy
    b. occulomotor nerve palsy
    c. klumpke's paralysis
    d. facial palsy

16. The lateral cutaneous nerve of forearm is the continuation of
    a. lower lateral cutaneous nerve of arm
    b. lateral root of median nerve
    c. musculocutaneous nerve
    d. ulnar nerve

17. Amputation at the supramaleolar/transmaleolar level is
    a. Chopart's amputation
    b. Syme's amputation
    c. Lisfranc amputation
    d. Boyd 's amputation

18. All of the following thenar muscles are supplied by median nerve EXCEPT
    a. adductor pollicis
    b. abductor pollicis brevis
    c. oppenens pollicis
    d. flexor pollicis brevis

19. The sympathetic division of the autonomic nervous system consists of
    a. S2-S4 and cranial nerve III, VII, IX, X
    b. T1-T12 and cranial nerve III, VIII, IX, X
    c. T1-T12 and L1,2
    d. L1,2 and S2-S4

20. The following are absolute contraindications to exercise EXCEPT
    a. Acute MI
    b. Systolic blood pressure <90mmHg
    c. uncontrolled systemic hypertension
    d. acute thrombophlebitis

21. All of the following are indications for manual percussion, vibration and postural drainage EXCEPT
    a. bronchiectasis
    b. chronic bronchitis
    c. lung abscess
    d. pulmonary embolism

22. The frequency of sound wave audible to human ear is
    a. 20Hz to 18000Hz
    b. 20Hz to 1800Hz
    c. 18KHz to 20KHz
    d. 20KHz to 18000Hz

23. In O'Donoghue's Unnhappy Triad, there is a tear of
    a. MCL, PCL and medial meniscus
    b. MCL, ACL and medial meniscus
    c. LCL, PCL and lateral meniscus
    d. LCL, ACL and lateral meniscus

24. The following drugs are opiod analgesics EXCEPT
    a. pethidine
    b. morphine
    c. tramadol hydrochloride
    d. diclofenac sodium

25. Passive flexion of baby's head causes loss of extensor tone
    a. moro reflex
    b. Landau reflex
    c. rooting reflex
    d. ATNR

26. The splint used in flexor tendon repair of hand is
    a. Klinert's splint
    b. dynamic cock up splint
    c. thumb spica
    d. foot drop slint

27. Adson's test and Roos test are the tests to determine
    a. bicipital tendonitis
    b. rotator cuff tendonitis
    c. thoracic outlet syndrome
    d. vertibrobasilar insufficiency

28. Injury to the long thoracic nerve causes
    a. police man's tip hand
    b. dinner fork deformity
    c. claw hand
    d. winging of scapula

29. A chronic disease characterized by progressive degeneration of motor neurons of the anterior horn cells and motor nuclei of brain stem
    a. poliomyelitis
    b. amyotrophic lateral sclerosis
    c. multiple sclerosis
    d. muscular dystrophy

30. Burn that extends all the way through the dermis and into the subcutaneous fat is
    a. first degree burn
    b. Partial thickness burn
    c. full thickness burn
    d. superficial burn

Part 2.

Write short notes on the following. Draw diagrams wherever necessary. (5x4=20)

1. Desribe corticospinal tract and mention its function
2. Define COPD, aetiology, clinical features and physiotherapy management.
3. Describe briefly the production, circulation and functions of CSF. What are the causes and clinical features of hydrocephalous?
4. Define community based rehabilitation and mention the concepts of CBR.

Section B.

Answer any one of the following case studies. **Draw diagrams** (1x50=50)

1. A 31 years old male complains of low back pain with duration of one week. He also complains of persistent pain in the right lateral leg which increases when he tries to stand straight. He has difficulty standing up from the chair and tying his shoe laces. He does not have a history of fall or injury but admits to long hours of sitting at card game. He feels comfortable sleeping in left side lying position and wakes up often during night with pain while turning. He has pain in the back and down the right leg with coughing and sneezing. He is afebrile and his general health condition is good. His laboratory investigations for blood are within normal ranges.

   Observation: slightly forward bent with left lateral shift. Decreased cadence.
   Palpation : mild tenderness over lower lumbar region. No warmth/ swelling
   ROM : reduced in all planes with through range pain at the lubosacra region.
   : Hip and knee ROM are full and pain free.
   Strength :Knee Extensors/Flexors -5B/L EHL/FHL – 5 B/L
   DTR : Knee (L)-2+ (R)-1+
   Sensation : no deficits but complains of occasional numbness with persisting pain at (R) lateral leg region
   Special Test: Positive slump test and SLRT-(R)-45deg (L)->90deg
   Radiograph: mild decrease in L3, 4 disc space

   1. What is most likely the diagnosis of this patient's symptoms?
   2. Mention two other causes of this disorder?
   3. What are the differential diagnoses?
   4. How do you rule out facet syndrome?
   5. Why does coughing and sneezing reproduce/cause pain?
   6. What other radiological changes would you observe if the patient was an elderly?
   7. What is the difference between myelopathy and radiculopathy?
   8. What are the two types of claudication and in what low back condition would you observe claudication?

9. Describe two other special tests for lumbar spine and two tests for sacroiliac joint?
10. In what conditions would you observe “Scottie dog with collar” and “Scottie dog decapitated” in a radiograph?
11. Describe the pathomechanics of your diagnosis.
12. Describe the structure and functions of the structure involved.
13. What is your physical therapy management of this patient? Briefly outline the medical and surgical management of this patient
14. Describe the McKenzie principle of management for this patient.

2. This 54 years old man apparently has been having vague epigastric discomfort. He is known to have alcohol abuse, but has no documented liver disease. Now he is admitted with a complete bowel obstruction, witnessed on abdominal x-ray. At the bedside, faint bowel sounds with a distended abdomen were observed. He went for emergency bowel surgery that night. You were able to talk to his wife the following day to confirm that he has smoked 2-3 packs a day for over 30 years. He coughs every morning and expectorates yellowish, sometimes brownish mucus. He was told by his doctor that he has bronchitis but he seldom seeks medical attention.

He is febrile immediately postoperatively. Today, on day 3 after surgery, his temperature is 39 deg C.

On examination, the patient is diaphoretic and in moderate respiratory distress. His breathing is rapid and shallow and she has a loose congested cough.

The patient is referred for intensive chest physiotherapy.

1. Briefly describe the pertinent features related to his smoking history
2. List the clinical signs of chest infection and atelectasis in this patient.
3. What would you expect to see on chest x-ray and to hear on auscultation?
4. Define atelectasis. What is surface tension, what maintains it and where is it produced?
5. What are the breath sounds and the adventitious sounds that you would expect to hear from this patient?
6. pH 7.5 $PaCO_2$ 32 PaO_2 85 HCO_3^- 24, What is the acid base disturbance? Is there compensation? Is there hypoxemeia?
7. What is hypoxemia and hypoxia?
8. What are the types of breathing exercises and briefly describe them.
9. Define FRC, FVC, FEV_1, SaO_2 and TV
10. Describe some physiological changes and functional consequences of immobilization and reduced activities
11. List 5 factors that affect the mucus flow
12. Formulate a problem list and a treatment plan for the above patient.