

CIVIL SERVICE COMMON EXAMINATION

Technical Graduates

PAPER III: for BPT (Bachelor of Physiotherapy)

Register Number.....Date.....

This paper consists of two sections: Section A consists of two parts; Part I: Multiple choice questions and Part II: Short answer questions. Please answer all the questions in Section A.

Section B consists of two case studies. Select any one case study and answer all the questions that follow.

Please answer Part II in Section A and Section B in separate answer sheet.

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Section A

I. Multiple choice questions. Please CIRCLE the correct answer. (1x30 = 30)

1. Physiotherapy is a medical science which deals with
 - a. Diagnosis and treatment of movement disorders
 - b. Requests of physicians
 - c. Orthopaedic conditions only
 - d. Neurological conditions only

2. Acetaminophen is a drug which has
 - a. Analgesic and antipyretic effects
 - b. Antibiotic and anti-inflammatory effects
 - c. Analgesic and steroidal anti-inflammatory effects
 - d. Analgesic and antiviral effects

3. Inner range muscle work is used to
 - a. Re-educate weak muscles
 - b. Strengthen antagonist muscle group
 - c. Gain joint range in the direction opposite to the muscle pull
 - d. Gain joint range in the direction of the muscle pull

4. Gate control theory of pain was first proposed by
 - a. Virchow and Hooke
 - b. Huntington and Wall
 - c. Melzack and Wall
 - d. Balock and Tausig

5. When unilateral loss of function of the abducens and facial nerves is accompanied by contralateral hemiplegia, the condition is called
 - a. Wallenberg's syndrome
 - b. Foville's syndrome
 - c. Millard-Gubler syndrome
 - d. Weber's syndrome

6. Pain impulse passing through the brain stem can cause interaction between
 - a. Red nucleus and PAG
 - b. Raphe nucleus and PAG
 - c. Beta endorphin and enkephalin
 - d. Pons and midbrain

7. Which of the following number is a constant that is used in Karvonen's formula to determine the maximum heart rate of a person
 - a. 120
 - b. 220
 - c. 320
 - d. 420

8. You will see winging of scapulae when you ask the patient to push against the wall. Which of the following nerves is possibly injured?
 - a. Nerve to subclavius
 - b. Nerve to latissimus dorsi
 - c. Nerve to serratus anterior
 - d. Nerve to subscapularis

9. What should be the target heart rate of a person, limiting the intensity of exercises performed at a time?
 - a. 20% - 30% of maximum heart rate
 - b. 40% - 50% of maximum heart rate
 - c. 60% - 70% of maximum heart rate
 - d. 80% - 90% of maximum heart rate

10. What is eight repetition maximum?
 - a. Patient performing the movement eight times maximum in one session
 - b. Amount of weight that a patient can lift eight times comfortably through a prescribed range without rest between the lifts
 - c. Patient performing the movement eight times maximum in one day
 - d. Amount of weight that a patient can lift eight times comfortably through a prescribed range with adequate rest between the lifts

11. In a human body, which of the following positions has the center of gravity farthest from the center of earth?
 - a. Lying
 - b. Sitting
 - c. Kneeling
 - d. Standing

12. The minimum power of a donor muscle before tendon transfer should be
 - a. Grade 5
 - b. Grade 4
 - c. Grade 3
 - d. Grade 2

13. A ball moving on a plane surface is said to be in
 - a. Stable equilibrium
 - b. Unstable equilibrium
 - c. Neutral equilibrium
 - d. All of the above

14. Effect of gravity is minimum when the movement is taking place in
 - a. Coronal plane
 - b. Sagittal plane
 - c. Inclined plane
 - d. Horizontal plane

15. Kienbock's disease is
 - a. Avascular necrosis of scaphoid
 - b. Avascular necrosis of lunate
 - c. Avascular necrosis of neck of femur
 - d. Avascular necrosis of distal tibia

16. Hip joint compression is reduced to minimum when the cane is used
- Ipsilateral to the painful hip
 - Contralateral to the painful hip
 - Either side of the painful hip
 - All of the above
17. Normal pressure hydrocephalous has the following features
- Urinary incontinence
 - Ataxia
 - Dementia
 - All of the above
18. Minimum score, a totally unconscious patient can have on glasgow coma scale is
- 0
 - 1
 - 3
 - 8
19. All of the following are abnormalities of movement EXCEPT
- Dystonic movement
 - Athetotic movement
 - Ataxic movement
 - Isotonic movement
20. Resting respiratory level is the point at which
- The tidal volume rests within the vital capacity
 - The tidal volume rests within the inspiratory capacity
 - The tidal volume rests within the functional residual capacity
 - The tidal volume rests within the total lung capacity
21. The lemniscal pathway in the spinal cord follow
- Anterolateral pathway
 - Dorsolateral pathway
 - Lateral pathway
 - Anterior pathway
22. Gerontology is
- A branch of medicine concerned with illnesses of old age and their care
 - Scientific study of the factors impacting the normal aging process and the effects of aging
 - Last stages of adulthood through death
 - Scientific study of human genes
23. Which of the following is a clinical disorder of pupillary function, where the pupil does not react to light but does react to accommodation?
- Adie's pupil
 - Nystagmic pupil
 - Hemianopic pupil
 - Argyll Robertson pupil
24. Thalamic syndrome is associated with
- Hemianesthesia with spontaneous pain and hemiparesis
 - Hemianesthesia with spontaneous pain and paraparesis
 - Hemianesthesia with spontaneous pain and quadriparesis
 - Hemianesthesia with spontaneous pain and paraplegia

25. Paralysis agitans is the disorder of
- Cerebellum
 - Brain stem
 - Basal ganglia
 - Cerebral cortex
26. Reciprocating gait orthosis is
- AFO that allow four point gait in paraplegic patients
 - KAFO that allow four point gait in paraplegic patients
 - HKAFO that allow four point gait in paraplegic patients
 - THKAFO that allow four point gait in paraplegic patients
27. Which of the following positions demand increased work of breathing?
- High side lying
 - Forward lean sitting
 - Supine lying
 - Forward lean standing
28. Which of the following breathing exercises is intended to increase the inspiratory capacity?
- Diaphragmatic breathing
 - Glossopharyngeal breathing
 - Pursed-lip breathing
 - Segmental breathing
29. A 20-year-old female comes to you with complaints of pain over her right shoulder for last two weeks. She experiences severe pain when she lifts the blankets to fold in the morning. She is not able to perform overhead activities from the front without bending the elbow. She also has pain while turning the doorknob. From her complaints, your provisional diagnosis could be
- Supraspinatus tendinitis
 - Bicipital tendinitis
 - Rotator cuff tendinitis
 - Impingement syndrome
30. HIV can be transmitted through all of the following EXCEPT
- Breast milk
 - Saliva
 - Blood
 - Semen

II. Write short notes on the following. Please use separate answer sheet to answer the questions. Write the question number against your answer. Draw diagrams and flow charts wherever necessary. (5x4 = 20)

1. Define impairment, disability and handicap with appropriate examples
2. Describe the developmental milestones of a child. Briefly explain the neonatal/ primitive reflexes
3. Describe the disturbances of sensation following interruption of the lemniscal pathways
4. Briefly explain your protocol of assessment of lower back pain and write down your management of patient with radiating LBP.

Section B

Choose one case study and answer the questions that follow. Please answer in separate answer sheet. Draw diagrams and flow charts wherever necessary. (50x1 = 50)

I. A 46-year-old female homemaker enters your office holding her right upper extremity in a guarded posture with a complaint of acute and worsening throbbing pain of three days' duration in her right shoulder that is unrelieved by rest. When questioned, the patient admits to mild pain and tenderness that began four months ago, with tenderness over the deltoid muscle and pain elicited when rolling over onto the right shoulder while sleeping. Also there was initially a loss of range of motion as well as a catching and painful sensation whenever the right arm was elevated between 75 degree to 100 degrees. The patient states that high doses of aspirin have helped ease her pain. She reports a new onset on non-insulin dependent diabetes for one year and reports no history of trauma to either shoulder.

Observation: No redness or sign of atrophy of spinatus muscle bellies

Palpation: Warmth and extreme tenderness over anterior deltoid area just superior to greater humeral tuberosity.

Range of Motion: Unassessed as patient refuses to move her shoulder.

Muscle Strength: Untested.

Selective Tension: Untested.

Joint Play: Attempts to assess arthrokinematic motion are met with resistance caused by pain.

Upper Quadrant Screening: Negative results to compression or distraction of the cervical spine.

Sensation: Normal

1. What is most likely wrong with this woman?
2. What is the cause of this disorder?
3. What is the pathogenesis of calcified tendinitis?
4. What is the clinical presentation?
5. What radiologic views are necessary, and how are apparent calcifications classified?
6. How do arthritic changes of this region differ radiologically from calcified tendinitis?
7. What is the radiologic appearance of calcific rupture into an adjacent bursa?
8. What is the differential diagnosis?
9. What rehabilitative therapy is appropriate during subacute phase?
10. What is the appropriate management during the acute phase?
11. List the rotator cuff muscles, their primary actions and briefly describe their strengthening program.
12. Explain scapulo-humeral rhythm

II. A 28-year-old male complains of low back pain of insidious onset with duration of more than three months. He complains of neck stiffness that makes driving an automobile difficult. He also reports morning stiffness that improves with activity and exercises. He also complains of a left swollen knee and right painful heel. Sitting through a long prayer is uncomfortable. When asked, he admits that he often wakes up in the middle of the night to walk about or take a hot shower so as to relieve his pain. The patient presents you with a letter of referral from a physician that is accompanied by the results of several tests. Pulmonary function tests showed diminished vital capacity and total lung capacity, although residual and functional residual volume were increased. Hematologic tests showed a mild normocytic anemia, and a normal peripheral white count. Erythrocyte sedimentation rate as well as alkaline and creatinine phosphatase were elevated. No rheumatoid factor was present.

Observation: Posture shows flattening of the lumbar lordosis and a dorsal stoop with accentuation of thoracic kyphosis.

Palpation: Tenderness over the spinous processes of the lumbar and thoracic vertebrae. A bony spur is palpated at the right heel at the proximal insertion of the plantar fascia.

Range of Motion: Severely diminished lateral flexion of the spine. Forward flexion and backward extension are decreased by one-half range. Both passive and active range of the left knee are diminished by 10 degrees.

Strength: This is grossly normal throughout with exception of left knee flexion and extension.

Flexibility: Tightness noted in the left hamstring and triceps surae, as well as the right Achilles tendon.

Special Tests: There is a positive Gaenslen's test.

Radiographs: Calcific spurring present in the right heel.

Titer for HLA-B27 antigen was positive.

1. What is most likely the cause of this patient's symptoms?
2. What are the seronegative spondylarthropathies?
3. What is the pathogenic etiology of this disorder?
4. How does this disorder differ from rheumatoid arthritis?
5. Which proximal and distal sites are typically affected with the spread of inflammation associated with this disorder?
6. What are the extraarticular manifestations of this disorder?
7. How does the radiographic appearance of this disorder change with evolution of the disease?
8. What is spondylodiskitis?
9. What is the clinical presentation of this patient?
10. Which provocative clinical tests elicit sacroiliac tenderness due to sacroiliitis?
11. What are the complications of this disorder? What is the differential diagnosis of this disease?
12. What physical therapy is appropriate in the management of this patient?
