

**ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2011
EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECIALIZATION PAPER FOR: PHYSIOTHERAPY

Date	: October 30, 2011
Total Marks	: 100
Examination Time	: 2.5 Hours
Reading Time	: 15 Minutes

INSTRUCTIONS

1. Write your Roll Number clearly on the answer booklet in the space provided.
2. The first 15 minutes is being provided to check the number of pages, printing errors, clarify doubts and to read the instructions. You are **NOT PERMITTED TO WRITE** during this time.
3. Use either **Blue** or **Black** ink pen or ball point pen for the written part and **Pencils** for the sketches and drawings.
4. All answers should be written on the Answer Booklet provided. Candidates are not allowed to write anything on the question paper.
5. This Question Booklet consists of **8 pages**. It is divided into two sections – namely SECTION A and SECTION B.

6. **SECTION A** consists of two parts. **Part I and Part II.**

Part I consists of 30 multiple choice questions carrying one (1) mark each and is **compulsory**. The answer of your choice should be clearly written **in whole** along with the question and option number on your answer booklet.

Part II consists of four (4) short answer questions of five (5) marks each and all questions are compulsory.

7. **SECTION B** consists of two **Case Studies**. Choose only **ONE** case study and answer the questions under your choice. Each case study carries fifty (50) marks in total.

SECTION A

Part 1: Multiple choice questions.

Choose the most appropriate answer. (1x30=30)

1. A person with antalgic spine and left lumbar list walks into your office. On examination you found that he has got intervertebral disc prolapse. The left lumbar list could be due to
 - a. True posterocentral prolapse of the disc
 - b. Left posterolateral prolapse of the disc
 - c. Right posterolateral prolapse of the disc
 - d. True anterior prolapse of the disc

2. An athlete comes to you with a complaint of pulled hamstrings. Which of the following tests differentiates a first or second degree strain from sprain?
 - a. Passive moments
 - b. Active movement
 - c. Resisted movement
 - d. Accessory movement

3. Which of the following statement is FALSE regarding spondylolisthesis at L5-S1?
 - a. Forward displacement of superior vertebrae over the inferior vertebrae
 - b. Could results in the signs and symptoms of spinal stenosis
 - c. Must treat with extension principle
 - d. Must treat with the flexion principle

4. The normal values for ABGs are:
 - a. pH=7.35, PaO₂=80-100 mmHg, PaCO₂=35-45 mmHg, HCO₃⁻=22-26 mmol/l
 - b. pH=7.35, PaO₂=80-100 mmHg, PaCO₂=25-35 mmHg, HCO₃⁻=22-26 mmol/l
 - c. pH=7.35, PaO₂=80-100 mmHg, PaCO₂=35-45 mmHg, HCO₃⁻=26-32 mmol/l
 - d. pH=7.35, PaO₂<80 mmHg, PaCO₂=35-45 mmHg, HCO₃⁻=26-32 mmol/l

5. Contra lateral loss of pain and temperature sensation with ipsilateral loss of motor function is seen in:
 - a. Anterior cord syndrome
 - b. Posterior cord syndrome
 - c. Central cord syndrome
 - d. Brown sequard syndrome

6. All of the following are the effects of upright positioning and mobilization on cardiopulmonary system EXCEPT:
 - a. Increased total lung capacity
 - b. Increased V_A/Q matching
 - c. Increased lung compliance
 - d. Increased AP diameter of the chest

7. The presence of increased amount of reduced Hb in blood causes:
 - a. Anoxia
 - b. Asphyxia
 - c. Anorexia
 - d. Cyanosis

8. At _____ month, a baby starts making some vocalization when spoken to.
 - a. 1
 - b. 2
 - c. 3
 - d. 4

9. What is the average head circumference of a normal term newborn?
 - a. 33-38 cm
 - b. 33-35 cm
 - c. 32-35 cm
 - d. 32-38 cm

10. The condition in which the patient is unable to formulate a plan of action.
 - a. Ideomotor apraxia
 - b. Motor apraxia
 - c. Constructional apraxia
 - d. Ideational apraxia

11. A set of internal processes associated with practice or experience leading to relatively permanent changes in the capability for skilled behavior is termed as:
 - a. Motor plan
 - b. Motor learning
 - c. Motor control
 - d. Motor programming

12. The incorporation of sensory stimulation technique into the facilitation approaches is based largely on the work of:
 - a. Dr. Herman Kabat and Maggie Knott
 - b. Drs. Karl and Berta Bobath
 - c. Brunnstorm
 - d. Margaret Rood

13. A score of 4 for Best Motor Response corresponds to which activity in Glasgow Coma Scale?
 - a. Withdrawal
 - b. Localizes
 - c. Abnormal flexion
 - d. Responds to commend

14. What is the stimulus for righting reaction?
- Weight shifting
 - Stroking
 - Joint compression
 - Slow rhythmic movement
15. All of the following orthoses are used in the correction of scoliosis EXCEPT:
- Boston orthosis
 - Minerva orthosis
 - Milwaukee brace
 - Chleston bending brace.
16. All of the following are **proprioceptive facilitation** technique EXCEPT
- Slow stroking
 - Quick stretch
 - Joint traction
 - Resistance
17. Amyotrophic lateral sclerosis is also known as:
- Multiple sclerosis
 - Primary lateral sclerosis
 - Motor neuron disease
 - Devic disease
18. A description of the type, amount and direction of motion; does not include the forces producing the motion is called:
- Kinetics
 - Kinematics
 - Speed
 - Dynamics
19. Usually dry, leathery and painless are the characteristic features of ____ burns
- First degree burn
 - Partial thickness burn
 - Full thickness burn
 - Fourth degree burn
20. All of the following are the determinants of the size of burns EXCEPT:
- Rule of nine
 - Rule of palm
 - Lund and Browder chart
 - Snellen chart

21. All of the following are true about the CO gas EXCEPT:
- Shifts the oxygen dissociation curve right
 - Produced from burning polyvinylchloride
 - Affinity for Hb is about 200 times that of oxygen
 - Invisible and odorless
22. A form of dynamic exercise in which the velocity of muscle shortening or lengthening is controlled by a rate-limiting device that controls the speed of movement of a body part.
- Isometric exercise
 - Isokinetic exercise
 - Isotonic exercise
 - Eccentric exercise.
23. _____ is a force that is parallel to the cross-sectional area of the tissue.
- Tension
 - Compression
 - Torsion
 - Shear
24. All of the following conditions are obstructive lung disorder EXCEPT:
- Chronic bronchitis
 - Pneumonia
 - Emphysema
 - Cystic fibrosis
25. Which of the following is contra-indicated to postural drainage and percussion?
- Pulmonary embolism
 - Pneumonia
 - Bronchiectasis
 - Emphysema
26. Dorsal subluxation of the lower end of the ulna due to the retarded growth of the lower end of radius is called:
- Dinner fork deformity
 - Haglund's deformity
 - Gun stock deformity
 - Madelung's deformity.
27. Which of the following tendons are inflamed or involved in the De Quervains tenosynovitis?
- ECRL and APB
 - APL and EPB
 - FPL and EPB
 - FPL and APL

28. Splinting following flexor tendon repair during 0-3 weeks should be of:
- Wrist=10-30 deg. Flexion, MCP=40-60 deg. Flexion and IP=full extension
 - Wrist=neutral, MCP=20-30 deg. Flexion and IP=full extension
 - Wrist=neutral, MCP=40-60 deg. Flexion and IP=10-20 deg. flexion
 - Wrist=40 deg. Flexion, MCP=40-60 deg. Flexion and IP=full flexion
29. A congenital brain malformation with complete or partial absence of cerebellar vermis is:
- Klippel Fiel Syndrome
 - Dandy Walker Syndrome
 - Arnold Chari Malformation
 - Klinefelter's syndrome
30. The failure to release acetylcholine at the neuromuscular junction is the cause of _____
- Myasthenia Gravis
 - Guillain- Barre syndrome
 - Lambert-Eaton syndrome
 - Locked-in syndrome

Part 2.

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

1. Write short notes on professional code of conduct, ethics and etiquette. (5)
2. Illustrate pain pathway and channel of pain modulation. (5)
3. Describe some inhibitory techniques to decrease hyperactivity and hypertonicity.(5)
4. Describe pathophysiology and clinical features of osteoarthritis. Mention some manual techniques to alleviate pain for an Osteoarthritis of Knee. Mention specific protocol. (5)

SECTION B.

Choose ONE case study and answer the questions that follow. Draw diagrams and flow charts wherever necessary.

1. A 40 year old woman Dolma comes to you with complaints of pain in her left shoulder for 3 months , occasional radiating pain down to the elbow and not able to sleep on the same side of pain. She had consulted physician and taken medicine but the pain had not subsided. She complains, she is not able to reach her neck and lower back with her left hand, she is not able to tighten her kera (belt), not able to lift her left arm and is not able to do many household chores. Answer all the following questions (50)
 - a. Write a comprehensive assessment of this patient strictly in an S.O.A.P format. Mention in points. (10)
 - b. Mention two home exercise programs other than wall climbing for Dolma that will help improve her range. Your exercise program should include number of repetitions and number of times she needs to do (2)
 - c. Mention the joint mobilization glide-direction that you will use to gain range of abduction, external rotation, internal rotation and flexion elevation. (4)
 - d. List four differential diagnoses for this patient? (2)
 - e. What assessment and test will you perform to rule out cervical radiculopathy for Dolma? Describe your assessment? (5)
 - f. Describe your treatment for a cervical radiculopathy and include one home exercise program other than isometric exercises. All your treatments must include dosage (intensity), duration and frequency. (5)
 - g. Describe Rotator Cuff Muscles including their attachments, nerve supply and actions. How will you progressively strengthen these muscles? (8)
 - h. For an antero-inferior dislocation of the shoulder joint, which muscle will you strengthen first and in which position of the shoulder? Describe the pathomechanics of recurrent shoulder dislocation (5)
 - i. Describe pathophysiology of lateral epicondylitis, clinical features and tests. - Mention your treatment for various stages. Briefly explain your exercise protocol. (5)

- j. Explain confirmatory test for carpal tunnel syndrome. How will you help relieve the symptom? - (4)

- 2. A. Write an essay including the progressive steps involved in rehabilitation of a spinal cord injury patient whose neurological level is C7. Methods and Expected outcomes/progress of each step must be clearly mentioned before going to the next step. Mention risks involved and prevention methods that you will use. Include the type of adaptive devices and wheelchair needed for this patient. Also mention the techniques that should be taught to the attendants for transferring patient on wheelchair up and down the stairs. (30)

- B. Describe briefly with illustrations the different types of lesions of the spinal cord. (20)