ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2012
EXAMINATION CATEGORY: TECHNICAL

PAPER III: SUBJECT SPECIALIZATION PAPER for PHYSIOTHERAPY

Date	**:14 October 2012**
Total Marks	**:100**
Examination Time	**:2.5 Hours**
Reading Time	**:15 Minutes (Prior to Exam. Time)**

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 **nine pages** including this page. 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. (30 questions X 1 mark = 30 marks)

1. The frictional resistance offered by the circulatory system to the flow of blood is termed as:
   a. Pulse pressure
   b. Blood pressure
   c. Systolic pressure
   d. Peripheral resistance

2. The amount of air remaining in the lung after quiet expiration:
   a. Functional residual capacity
   b. Total lung capacity
   c. Vital capacity
   d. Inspiratory capacity.

3. Which of the following conveys the sensation of warmth?
   a. Meissner's corpuscles
   b. Ruffini's end bulb
   c. Krause's end bulb
   d. Pacinian corpuscles

4. The centre of righting reflexes is situated in_____:
   a. Raphe nucleus
   b. Clarke's nucleus
   c. Red nucleus
   d. Medulla oblangata

5. What is the oxygen saturation in the blood below which signs of oxygen deficiency develop?
   a. 56%
   b. 66%
   c. 85%
   d. 90%

6. Peripheral neuritis is caused by the deficiency of vitamin:
   a. D
   b. E
   c. B_1
   d. B_2

7. The term used to describe difficulty in reading:
   a. Dysgraphia
   b. Paraphasia
   c. Dyslexia
   d. Dyspraxia

8. Normal control of head and trunk implies:
   a. Extension in prone, flexion in supine and extension in side lying.
   b. Flexion in prone, extension in supine and lateral flexion in side lying.
   c. Extension in prone, flexion in supine and lateral flexion in side lying.
   d. Flexion in prone, flexion in supine and extension in side lying.

9. A type of cerebral palsy where there is a damage to the extrapyramidal system:
   a. Spastic diplegia
   b. Hemiplegic cerebral palsy
   c. Ataxic cerebral palsy
   d. Athetotic cerebral palsy.

10. All of the following are the late complications of fracture EXCEPT:
   a. Non union
   b. Tardy nerve palsy
   c. Volkman's ischemia
   d. Avascular necrosis.

11. Conduction burn is one of the types of _____burns.
   a. Thermal burn
   b. Electrical burn
   c. Radiation burn
   d. Chemical burn

12. Parkinson's disease is a state characterized pharmacologically by:
    a. Degeneration of nigrostriatal dopaminergic projections and preservation of striatal cholinergic interneurons
    b. Degeneration of GABA and cholinergic neurons and preservation of dopaminergic connections
    c. Degeneration of cholinergic neurons and dopaminergic projections
    d. Increased dopaminergic activity along with increased cholinergic activity.

13. The ability of a tissue to absorb energy within the plastic range without breaking is called____
    a. Resilience
    b. Creep
    c. Toughness
    d. Yield strength

14. How many weeks gestation (fetal development) is considered normal for a full term baby?
    a. 30 weeks
    b. 32 weeks
    c. 36 weeks
    d. 37 weeks

15. All of the following cardiovascular and pulmonary effects are true for SUPINE position EXCEPT:
    a. Decrease chestwall AP diameter
    b. Pooling of secretions to the posterior lung zone
    c. Increases FRC
    d. Increases central blood volume

16. One of the benefit of keeping an infant in side-lying position in the early stages of life is
    a. Improves head control
    b. Better view of the surrounding
    c. Shapes the head
    d. Encourages hands to be brought together in midline

17. Which of the following is not an indication of resistance exercises?
    a. Increase strength
    b. Increase speed
    c. Increase endurance
    d. Increase power

18. The ability to perform low intensity repetitive exercises over a long period of time:
    a. Force
    b. Strength
    c. Power
    d. Endurance

19. World Physiotherapy Day:
    a. 3rd December
    b. 3rd September
    c. 2nd December
    d. 2nd August

20. 'Mobilization with movements' best describes:
    a. Mulligan technique
    b. Maitland technique
    c. McKenzie technique
    d. Bobath technique

21. What is the normal position of a newborn child?
    a. Flexion
    b. Extension
    c. Abduction
    d. None of the above

22. The motions that occur between the joint surfaces as well as the distensibility or 'give' in the joint capsule, which allows the bones to move is called:
    a. Component motion
    b. Joint traction
    c. Physiologic movement
    d. Joint play

23. A rapid, powerful movement preceded by a preloading countermovement that creates a stretch-shortening cycle:
    a. Plyometrics
    b. Circuit weight training
    c. Kinematics
    d. DeLorme's

24. One of the most inexpensive and beneficial technique that is carried out in NICU with babies who are born preterm is:
    a. Kangaroo care
    b. Roods approach
    c. NDT
    d. Sensory Integration

25. The greatest amount of weight a muscle can move through the range of motion a specific number of times is termed as:
    a. Exercise load
    b. Repetition maximum
    c. Rhythmic stabilization
    d. Exercise bouts

26. Which of the following is true regarding early intervention?
    a. It enhances child development
    b. Provide support and assistance to family only
    c. Maximize child's and family's benefit to society
    d. It only consist of rehabilitation approach

27. The primary motor area located in the precentral gyrus of the frontal lobe corresponds to Brodmann's _____
    a. Area 6 and 8
    b. Area 44
    c. Area 4
    d. Area 18

28. Slow pain which is a burning sensation that has a slow onset, greater persistence and a less clear location results from the activation of_____ fibres.
    a. C
    b. A- alpha
    c. B
    d. A- delta

29. All of the following are active inhibition techniques EXCEPT:
    a. Hold relax
    b. Agonist contraction
    c. Antagonist contraction
    d. Hold relax with agonist contraction

30. All of the following must be avoided after a contusion EXCEPT:
    a. Heat
    b. Stretching
    c. Alcohol
    d. Vigorous massage

Part 2: Short Answer Questions

Write short notes on the following. Draw diagrams and flow charts wherever necessary. (4 questions X 5 marks=20marks)

1. Origin, insertion, nerve supply and functions of rotator cuff muscles.
2. Describe and illustrate spinothalamic tract.
3. Illustrate lung segments and describe postural drainage.
4. You are visiting a friend and her new baby. The baby is 2 months old. You notice that sometimes when the baby turns her head to the left, her left arm extends and her right arm flexes. What reflex is this an example of? Draw and explain it. Do you think this indicates a problem for this baby or is this normal reflex?

SECTION B

Choose any ONE of the following case studies. Draw diagrams and flow charts wherever necessary. (1 question X 50 marks = 50 marks)

1. A 34-year-old, right-handed complained of right arm heaviness and palmar paraesthesias for more than one year. He had been suffering from right-sided headaches for many years. The "standard" neurological examination was non contributory. Mild C4-5 and C5-6 discopathies were diagnosed. The patient was treated with anti-inflammatory drugs, analgesics, cervical collar, muscular and 2 cervical epidural infiltrations. There was no improvement following these treatments and the patient sought consultation in your clinic. His complaints were pain in the cervical posterior region, radiating toward the right side of the head and the right shoulder, and right arm diffuse numbness upon exercise or maintained positions. On clinical examination, the upper third of the trapezius was tender on palpation; palpation of the supraclavicular area was negative; the right radial pulse was reduced at 60 degrees of arm abduction and disappeared at 90 degrees; concomitantly, the patient complained of right upper extremity numbness; the test was negative on the left side. The hands-up test produced right arm heaviness after 25 movements and was negative on the left. The neurological examination showed no motor, sensory nor deep tendon reflexes deficit. The subclavian artery doppler confirmed the clinical findings of complete disappearance of flux in the right artery upon arm elevation; no abnormality was seen on the left.

a. What is your diagnosis for this client? (2 marks)
b. Name two special tests you would perform to justify your diagnosis. Describe the process of how you would perform those tests (2+8 marks)
c. List 4 differential diagnoses for this client. (4 marks)
d. How would you rule out discopathy for this client? (4 marks)
e. What could be the cause of his headache? (2 marks)
f. Name the hands-up test performed for this patient? (2 marks)
g. What is radicular pain and referred pain? (2 marks)
h. Describe and illustrate pain gate theory. (5 marks)
i. Describe you treatment for this client? (10 marks)
j. What is the myotome and dermatomal distribution of C6? (2 marks)
k. Define spondylosis, spondylitis, spondylolysis and spondylolisthesis. (4 marks)
l. Origin, insertion and function of scalenus medius. (3 marks)

2. A 52-year- old woman was cooking in the kitchen when she collapsed on the floor. Her daughter called an ambulance and the woman was taken to emergency room. She had suffered a stroke, and slowly regained her consciousness over the next 2 days. However, when she woke up, she had the following signs and symptoms:

   - Paralysis of the right face, arm and leg
   - Loss of sensation to touch of right arm and leg
   - Inability to answer questions but ability to understand what was said to her
   - Ability to write down her thoughts more easily than to speak them

a. Write a comprehensive assessment of this patient. (10 marks)
b. Based upon the patient's symptom, which cerebral artery was blocked? (2 marks)
c. What is the name of her language disorder and what caused it? (2 marks)
d. How would be her facial paralysis? Explain with diagram the facial nerve pathway and distribution. (10 marks)
e. Explain and illustrate the circle of willis. (10 marks)
f. Describe your treatment/management for this patient. (10 marks)
g. What is TIA? (1 mark)
h. Define rehabilitation. (1 mark)
i. Define community based rehabilitation (CBR) and list three concepts of CBR. (4 marks)

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