

**ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2022
EXAMINATION CATEGORY: TECHNICAL**

PAPER III: SUBJECT SPECIALISATION PAPER FOR OCCUPATIONAL THERAPY

Date	: October 9, 2022
Total Marks	: 100
Writing Time	: 150 minutes (2.5 hours)
Reading Time	: 15 minutes (prior to writing time)

GENERAL INSTRUCTIONS:

1. Write your Registration Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is to check the number of pages of Question Paper, printing errors, clarify doubts and to read the instructions. You are NOT permitted to write during this time.
3. This paper consists of **TWO SECTIONS**, namely SECTION A & SECTION B:
 - **SECTION A** has two parts: Part I - 30 Multiple Choice Questions
Part II - 4 Short Answer QuestionsAll questions under SECTION A are COMPULSORY.
 - **SECTION B** consists of two Case Studies. Choose only **ONE** case study and answer the questions of your choice.
4. All answers should be written on the Answer Booklet provided to you. Candidates are not allowed to write anything on the question paper. If required, ask for additional Answer Booklet.
5. All answers should be written with correct numbering of Section, Part and Question Number in the Answer Booklet provided to you. Note that any answer written without indicating the Section, Part and Question Number will NOT be evaluated and no marks will be awarded.
6. Begin each Section and Part on a fresh page of the Answer Booklet.
7. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
8. Use of any other paper including paper for rough work is not permitted.
9. **You must hand over the Answer Booklet to the Invigilator before leaving the examination hall.**
10. This paper has **8 printed pages**, including this instruction page.

GOOD LUCK

SECTION A

PART I: Multiple Choice Questions [30 marks]

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

1. Which joint of the shoulder complex is **NOT** a “true anatomic joint”?
 - a) Sternoclavicular joint
 - b) Acromioclavicular joint
 - c) Scapulohumeral joint
 - d) Scapulothoracic joint

2. The capsular pattern of glenohumeral joint is characterized by
 - a) abduction most limited, followed by external rotation, abduction and flexion.
 - b) external rotation most limited, followed by abduction, internal rotation and flexion.
 - c) internal rotation most limited, followed by abduction, external rotation and flexion.
 - d) external rotation most limited, followed by adduction, internal rotation and flexion.

3. A stroke patient can hold water bottle and tennis ball as well as fully release objects from his/her hand. What is the patient’s Brunnstrom recovery stage?
 - a) Stage III
 - b) Stage IV
 - c) Stage V
 - d) Stage VI

4. A cystic swelling of the dura and arachnoid, that protrudes through the neural tube defect is _____.
 - a) Spina bifida occulta
 - b) Meningocele
 - c) Meningomyelocele
 - d) Myeloschisis

5. Turning of the head towards the direction of stimulus, simultaneous opening of the mouth and extension of tongue when the corner of an infant’s mouth or cheek is stimulated by stroking or touching:
 - a) Rooting reflex
 - b) Sucking reflex
 - c) Snout reflex
 - d) Palmomental reflex

6. A method to correct or prevent behavioural problems in children with a use of videos or a live good behaviour example of a peer:
 - a) Time-in and Time-out
 - b) Verbal praise
 - c) Modelling
 - d) Planned ignorance

7. Which type of splinting is best used in a patient with spastic wrist and hand?
- Ulnar gutter
 - Sugar tong splint
 - Dorsal splint
 - Volar splint
8. The upper limb functional impairments are more pronounced than lower limbs in _____.
- Anterior cord syndrome
 - Posterior cord syndrome
 - Central cord syndrome
 - Brown sequard syndrome
9. You observe a 10-years-old boy fidgets, spins or twirls frequently, and rocks in his chair while performing fine motor tasks at the clinic. During evaluation, he wants to try all suspended equipment in the room. This assessment findings mostly correlates to
- Low threshold auditory processing.
 - Low threshold vestibular processing.
 - High threshold vestibular processing.
 - High threshold tactile processing.
10. An abnormal, dance like quick irregular involuntary movements of feet or hands are termed as _____.
- Athetosis
 - Ballism
 - Tremor
 - Chorea
11. Which joint binds the shoulder complex to the axial skeleton?
- Scapulothoracic joint
 - Acromioclavicular joint
 - Glenohumeral joint
 - Sternoclavicular joint
12. A patient who was diagnosed with a wrist sprain some 6 months ago comes to consult you with a complaint of persistent wrist pain and aggravated by palpation of snuff box. What might be the MOST likely and accurate diagnosis?
- Dorsal Intercalated Segment Instability (DISI)
 - Scaphoid Non-Union Advanced Collapse (SNAC)
 - Volar Intercalated Segment Instability (VISI)
 - Scaphoid Lunate Advanced Collapse (SLAC)
13. A set of internal processes associated with practice or experience leading to relatively permanent changes in the capability for skilled behaviour is known as:
- Motor plan
 - Motor control
 - Motor learning
 - Motor programming

14. The incorporation of sensory stimulation techniques into the facilitation approaches is based largely on the work of:
- Margaret Rood
 - Brunnstrom
 - Dr. Herman Kabat and Margaret Knott
 - Dr. Karl and Berta Bobath
15. A child with sensory processing issues in body awareness and modulation, affecting attention and transition through out the day, which of the following is **NOT** an appropriate intervention for this child?
- Free play/running in the play ground
 - Single point platform swinging
 - Jumping on a trampoline
 - Joint compression
16. Which of the following is **NOT** a component of activity analysis?
- Tool demands
 - Sequence and timing
 - Space demand
 - Relevance and importance to client
17. Which victim would need only rescue breathing?
- Agonal gasping with no pulse
 - No breathing and a pulse
 - Breathing with a weak pulse
 - No breathing and no pulse
18. A type of cerebral palsy where there is a damage to the extrapyramidal system:
- Spastic diplegia
 - Hemiplegic cerebral palsy
 - Ataxic cerebral palsy
 - Athetotic cerebral palsy
19. Which one of the following conditions is **NOT** a cause of posterior elbow pain?
- Olecranon spur
 - Osteochondritis dissecans of the trochlea
 - Olecranon bursitis
 - Osteochondritis dissecans of the olecranon
20. According to Erikson, what age would be included in the Industry vs. Inferiority stage?
- Birth to 1 years old
 - 1 to 3 years old
 - 6 to 12 years old
 - 13 to 17 years old
21. Which one of the following is the test for lateral epicondylitis or tennis elbow?
- Jobe's test
 - Speeds test
 - Mill's test
 - Sharpey's test

22. Which muscle of the rotator cuff is the primary muscle force for external rotation of the shoulder?
- Teres minor
 - Infraspinatus
 - Subscapularis
 - Supraspinatus
23. A child is frequently observed watching the child next to him instead of performing his assigned task with the goal of increasing attention span, the behaviour MOST likely indicates a problem of:
- Distractibility
 - Memory
 - Spatial operations
 - Generalization of learning
24. Thumb spica is a splint used for:
- Trigger thumb
 - Carpal tunnel syndrome
 - De Quervain tenosynovitis
 - Wrist sprain
25. One of the main objectives of PNF is to:
- Separate the joint surfaces
 - Establishing a balance between antagonists
 - Initiate voluntary movement
 - Enhance speed of response
26. What are the rate and depth for chest compression when providing CPR to an adult?
- A rate of 60 to 80 compressions/min and a depth of about 1 inch
 - A rate of 80 to 100 compressions/min and a depth of at least 2 inches
 - A rate of 100 to 120 compressions/min and a depth of about 1 inch
 - A rate of 100 to 120 compressions/min and a depth of at least 2 inches
27. By what age the child responds spontaneously when an examiners' head is hidden in a towel?
- 6-7 months
 - 3-4 months
 - 10-11 month
 - 1 year
28. At what age the child should be drawing a complete square?
- 30 to <36 months
 - 36 to <42 months
 - 42 to <48 months
 - 48-60 months
29. A child with tactile-defensiveness is receiving an OT intervention using SI approach. In introducing tactile stimuli to the child, the most appropriate method for the therapist to use is:
- Apply the stimulus in the direction opposite of hair growth with vision occluded.
 - Provide deep touch and firm pressure where the child can see the stimuli.
 - Apply light touch across the face and abdomen with vision occluded.
 - Provide light brushing across the palmer surfaces of the extremities with the child watching.

30. You are treating an individual who has suddenly been diagnosed with a disabling condition. Which would be the adaptive response that would most likely pass in time without intervention?
- Dependency reaction
 - Stress reaction
 - Mourning reaction
 - Desire to set unrealistic goals

PART II – Short Answer Questions [20 marks]

This part has 4 Short Answer Questions. Answer ALL the questions. Each question carries 5 marks.

Illustrate wherever necessary.

1. What is hydrocephalus and what are its types? How can an OT help a child with hydrocephalus?
2. Describe corticospinal tract.
3. Describe briefly the ASD and OT interventions.
4. Behavioural problems and its managements.

SECTION B: Case Study [50 marks]

Choose either CASE I OR CASE II from this section. Each case study carries 50 marks. Mark for each sub-question is indicated in the brackets.

CASE I

A 52-year-old female farmer from one of the remote places is admitted to the acute care ward in JDWNRH for difficulty in moving the right half of her body. On the day of evaluation, you have learned that the patient has had the attack 3 weeks ago for which she was first managed at home and then taken to the local hospital, after which she was referred to National Referral Hospital for imaging and further management. She was a known case of Hypertension but was not on regular medications. There is no history of other family members with the same sickness, but her siblings living elsewhere have raised blood pressure. She takes alcohol occasionally and prefers proper traditional Bhutanese cuisine with “Pa” and “Sikam”.

Her vitals were, BP: 135/75 mmHg, SPO2: 95 percent with 1L O2, HR: 66bpm, RR: 12/min)

The CT showed bleeding in the left ICH.

On further observation, she is awake and conscious but could not speak fluently. A deviation in her mouth was leading to drooling and was found fed from an NG tube. Her left arm was kept on her lap with the help of another arm and was leaning on the bed, about 45 degrees upright. The right leg was

rotated outwards and hyperextension of knees and plantar flexion of ankle, while the other leg was found in the right attitude.

The examination details revealed that her gag reflex was delayed and weak, spasticity in affected limbs. There was little movement in the flexor muscles in the right arm and extensor muscles in the right leg. She needed help with sitting on the edge of the bed with feet on the floor, but could roll from one side to the other without help. She couldn't perform any other functional movement from sitting to standing etc.

Other medical treatment included for aspiration pneumonia and medical HTN and Type II Diabetes mellitus.

Answer the following questions with regard to the above case scenario.

1. Define the diagnosis of above case. (1 Mark)
2. What are the risk factors associated with above case? (1 Mark)
3. Which functional areas of the brain are affected according to above symptoms? Mention specific Brodman's Area. (2 Marks)
4. Which circulation is disrupted in the above case? (1 Mark)
5. Explain the causes of above condition. (2 Marks)
6. Name one outcome measure used to assess the severity of above-mentioned case. (1 Mark)
7. State four functional outcome measures that can be used to measure the severity of functional impairment? (2 Marks)
8. Explain Brunstrom stages of motor recovery of upper limb. (5 Marks)
9. Explain your treatment approaches with justification on motor retraining of her arm. (5 Marks)
10. What are the occupational therapy principles in management of such cases? (3 Marks)
11. What are your short term and long-term goals for her? (4 Marks)
12. How will you assess the cognitive impairment and visuospatial disorder in this patient? (2 Marks)
13. What would be the role of speech therapist and physiotherapist in this case? (4 Marks)
14. Explain at least two differences between flexor and extensor synergy patterns. (2 Marks)
15. Explain the role of social worker and other support group for this type of cases. (2 marks)
16. Describe circle of Willis. (6 Marks)
17. What are the components of ARAT kit? (4 Marks)
18. What is tone? Explain briefly the types of tone. (3 Marks)

CASE II

A 40-years-old man comes to you with the complaints of pain and inability to raise his right arm. You learn that, he had a history of fall on an outstretched hand from a bicycle 6 weeks ago and was rushed to emergency department since he had a severe pain on his right shoulder region. The x-ray investigation showed that he had a right clavicle fracture and was advised to immobilize his shoulder in a clavicular brace and to use an arm sling. You also learn that he is physically active and he has no other co-morbidities.

You observe that his arm is hanging loose by the side of his trunk, medially rotated at the shoulder, elbows extended, and with the back of his forearm and hand facing anteriorly. Upon assessment, there was no flexion and external rotation at the shoulder, elbow flexion and supination were also absent.

Answer the following questions with regard to the above case scenario. Illustrate wherever necessary.

1. What are the differential diagnoses for the above case? (2 Marks)
2. What is your diagnosis for his condition? (1 Mark)
3. What investigations can be done to confirm your diagnosis? (2 Marks)
4. Describe your management plans for his condition. (5 Marks)
5. Name one deformity of the elbow. What deformity does he have, if there is any and describe it? (5 Marks)
6. Would you recommend splinting for him? If yes, what splint would you recommend? (2 Marks)
7. Define pain, acute pain and chronic pain. (3 marks)
8. How will you manage his pain? (2 Marks)
9. Define ultrasound. Describe briefly the production of ultrasound in ultrasonic therapy unit. (5 Marks)
10. What are the primary shoulder rotator muscles? (2 Marks)
11. Origin, insertion, nerve supply and actions of teres minor and biceps brachii. (5 marks)
12. Describe the brachial plexus, list the branches and the muscles it innervates. (10 Marks)
13. What is Erb's point and Erb-Duchenne palsy? (2 Marks)
14. List down the risk factors of Erb's palsy in the new born. (4 Marks)

TASHI DELEK