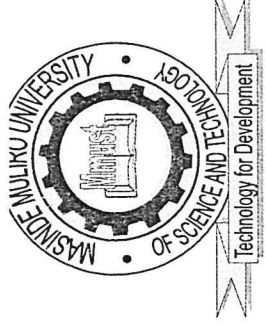


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(University of Choice)
**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

**MAIN CAMPUS
UNIVERSITY EXAMINATIONS
2021/2022 ACADEMIC YEAR**

SECOND YEAR, SECOND TRIMESTER EXAMINATION

**FOR THE DEGREE
OF
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
MAIN PAPER**

COURSE CODE: BSP 222

COURSE TITLE: EXERCISE THERAPY II

DATE: WEDNESDAY 20TH APRIL 2022

TIME: 8:00-11:00 AM

INSTRUCTIONS TO CANDIDATES
Answer All Questions

Section A: Multiple Choice Questions (MCQ)

20 Marks.

Section B: Short Answer Questions (SAQ)

40 Marks.

Section C: Long Answer Question (LAQ)

40 Marks

TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This paper has 5 pages

SECTION A: MULTIPLE CHOICE QUESTIONS (MCQ) 20 MARKS

CASE 1

A 30-year-old male client presents with bilateral lower back pain. This pain occurs following periods of sitting at a computer for longer than 20 minutes.

QUESTIONS 1 TO 4 refer to CASE 1

1. What is the typical position of the lumbar spine and pelvis in sitting?
 - a) The pelvis tilts anteriorly and the lumbar lordosis increases
 - b) The pelvis tilts posteriorly and the lumbar lordosis decreases.
 - c) The pelvis tilts posteriorly and the lumbar lordosis increases.
 - d) The pelvis tilts anteriorly and the lumbar lordosis decreases.
2. According to the McKenzie approach, which of the following syndromes is the client likely experiencing?
 - a) Compression syndrome
 - b) Postural syndrome
 - c) Dysfunction syndrome
 - d) Derangement syndrome
3. What is the most likely consequence of maintaining a prolonged sitting posture at work?
 - a) Degeneration of the facet joints of the lower lumbar spine
 - b) Shortening of the erector spinae muscles and under activated multifidus muscles
 - c) Loss of lumbar extension due to adaptive shortening of the soft tissues
 - d) Development of a large posterolateral disc herniation
4. What is the most appropriate action for the physiotherapist to take?
 - a) Teach the client how to perform extension exercises in prone.
 - b) Perform passive extension mobilizations to restore lumbar extension.
 - c) Teach the client how to perform posterior pelvic tilt exercises in sitting.
 - d) Encourage frequent standing and extension of the spine.
5. The SAID principle tells us that
 - a) All training should eventually lead to task specific training
 - b) Speed must be added to the demand on tissues
 - c) Comprehensive exercise including core and cardio will improve specific function
6. To add power to eccentric exercise you must add speed
 - a) True
 - b) False
7. All patients should receive generalized training since all tissues become involved in injury can cause sensorimotor deficits in the opposite limb
 - a) True
 - b) False
8. Please order the following when doing neuromuscular reeducation 1. Motor learning 2. Re-education 3. Muscle activation. 4. Functional movement training
 - a) 3,2,1,4
 - b) 1,2,3,4
 - c) 2,1,3,4
 - d) 4,2,1,3
9. Stability requires strength. Strength equals stability

10. For the recovering muscles _____.
- True
 - False
11. For the recovering muscles _____.
- Concentric exercises are given before eccentric
 - Eccentric exercises are given before concentric
 - Concentric and eccentric exercises are given together
 - Eccentric exercises are given before static.
12. What is the best term used to describe overload principle?
- Weight
 - Pain
 - Fatigue
 - 1 RM
13. Ideal training occurs when
- Increasing tolerance increases capacity naturally
 - Tolerance increased then capacity is increased
 - Capacity is increased thereby increasing tolerance
 - Tolerance and capacity are increased together
14. Which of the following mms groups are activated during the Hip strategy?
- Abdominals & quads (forward sway)
 - Paraspinals & hamstrings (Backward sway)
 - MMS activated distal to proximal with hip strategy
 - Abductors & adductors (lateral sway)
15. Eccentric exercises are best used to treat
- Coordination deficits
 - Tendon injuries
 - Muscle injuries
 - Endurance deficits
16. Frenkel exercises are devised to improve co-ordination by use of sight, sound, and touch in case of ataxia due to _____.
- Cerebellar lesion
 - Loss of kinesthetic sensation
 - Spastic paralysis
 - Flaccid paralysis.
17. To maintain good posture, the line of gravity should fall
- Anterior to knee joint
 - Posterior to knee joint
 - Anterior to shoulder
 - Posterior to the ear
18. Which of the following conditions would you consider the most appropriate indication for the use of high-grade joint mobilization techniques?
- Loss of accessory joint movement due to capsular restriction
 - Functional immobility: e.g., paralysis
 - Joint hypomobility due to osteoarticular blockage
 - Pain

18. A 20-year-old client comes to a physiotherapy clinic reporting headaches and neck pain. Postural evaluation shows a significant forward head posture. Which one of the following muscles is likely to be tight given this scenario?
- Rhomboids
 - Rectus capitus posterior major
 - Longus coli
 - Longus capitus
19. When non-weight bearing, dorsiflexion of the talocrural joint results in the talus rolling anteriorly and sliding posteriorly on the distal leg.
- True
 - False
20. Double pulley rope is used to support heavy body part it becomes.
- Difficult to elevate the part by lifting the wooden cleat up
 - Possible to do 3-d movements
 - Easy to elevate the part by pulling the wooden cleat down
 - None of the above

SECTION B: SHORT ANSWER QUESTIONS (SAQ)

40 MARKS

ANSWER ALL QUESTIONS.

- An individual is immobilized in a cast for 4 to 6 weeks following a fracture. In general, what structures lose their elasticity, and what restrictions do you feel when testing range of motion, joint play, and flexibility? (5 MARKS)
- A person is experiencing falls when rising from a chair. Using biomechanical principles of balance, what adjustments can the person immediately make to increase his or her stability and prevent falls? (5 MARKS)
- Mike is a 54-year-old man who tore his right medial meniscus playing basketball. He is 2 weeks status post arthroscopic debridement of the torn piece of cartilage. Mike has returned to his desk job as a computer programmer but has a strong desire to return to his active workout schedule and weekend sports leagues. The surgeon has told Mike that he has no limitations except pain.
 - Formalize a program to utilize the shallow water (4-ft depth) to start Mike with independent exercises for strength and flexibility. (5 marks)
 - What can Mike do in the pool to maintain his cardiovascular fitness while his knee heals? (5 marks)
- Explain how faulty posture can cause painful symptoms (5 marks)
- A patient reports to the clinic with anterior pelvic tilt. Explain how this could lead to low back pain according to Janda lower crossed syndrome (5 marks)
- State the advantages of group exercises (5 marks)
- Instruct a patient ambulating non weight bearing with elbow crutches on ascending and descending stairs (5 marks)

**SECTION C: LONG ANSWER QUESTIONS (LAQS)
CHOOSE TWO QUESTIONS EACH ONE IS 20 MARKS**

40 MARKS

1. Differentiate and discuss treatment activities that you would use to train static, dynamic, anticipatory, reactive, and sensory organization aspects of balance control. Provide examples of how you would progress each of the activities (20 marks)
2. A 20-year-old male soccer player sustained a right mid-tibial fracture in a motor vehicle accident and was required to wear a long-leg rigid cast for 6 weeks. You are seeing the patient 1 week after cast removal for physical therapy. He would like to return to playing soccer but is currently unable to maintain balance on his right leg to kick a soccer ball. What underlying impairments might be causing this individual's balance problems, and how would you design an exercise program that would allow him to reach his goals? (20 marks)
3. Your patient is a 35-year-old computer programmer who is referred to you because of pain symptoms in the right cervical, posterior shoulder, and arm regions. The symptoms get progressively worse when at work; usually the pain begins within 1 hour, and it is 6/10 by lunchtime. Examination reveals forward head and round shoulder posture. Capital flexion 50% range, cervical rotation and side bending are each 80% range, shoulder external rotation is 75°. There is restricted flexibility in the pectoralis major, pectoralis minor, levator scapulae, and scalene muscles. Cervical quadrant test reproduces the tingling in the right hand; all other neurological tests are negative. Strength of the suprahoid and infrahyoid muscles, scapular retractors, and shoulder lateral rotators is 4/5. (20 marks)
 - a) What is provoking the patient's symptoms and signs? (5 marks)
 - b) What are the functional limitations? What is the prognosis? (5 marks)
 - c) Identify impairment and functional outcome goals. (5 marks)
 - d) Establish a program of intervention. How can you progress this person to functional independence (5 marks)?