



AMREF INTERNATIONAL UNIVERSITY
SCHOOL OF MEDICAL SCIENCES
DEPARTMENT OF REHABILITATIVE MEDICINE
BACHELOR OF SCIENCE IN PHYSIOTHERAPY
END OF JAN-APRIL 2024 SEMESTER EXAMINATIONS

UNIT CODE: PHT 232

UNIT NAME: THERAPEUTIC EXERCISES AND EXERCISE PRESCRIPTION
EXAM (FRESH ENTRY)

DATE: 15TH APRIL 2024

TIME: TWO HOURS

START: 9:00 AM STOP: 11:00AM

INSTRUCTIONS

- 1. Attempt all questions as per the instructions in each section**
- 2. This exam is marked out of 70 marks**
- 3. This Examination comprises of Sections A, B and C**
- 4. DO NOT WRITE ON THIS QUESTION PAPER**

Section A

Attempt all the questions in this section

1. When choosing between a submaximal and maximal exercise test, a fitness professional should consider the client's:
 - a) Age only
 - b) Fitness level and health status
 - c) Motivation level only
 - d) Availability of equipment only
2. An effective resistance training program should target all major muscle groups. How many times per week is it recommended to train each muscle group for optimal results?
 - a) Every other day
 - b) 2-3 times a week
 - c) Daily training is necessary for each muscle group.
 - d) Once a week is sufficient to see results.
3. You're training for a marathon and want to improve your flexibility to enhance your performance. Local experts recommend holding stretches for a specific duration to maximize their effectiveness. Which of the following durations is most consistent with local recommendations for flexibility training?
 - a) 10 seconds/8-10 times
 - b) 30 seconds/2-4 times
 - c) 60 minute/1-2 times
 - d) 30 seconds/5-7 times
4. You sprained your ankle and the initial swelling has gone down. What stage of healing are you likely in if you are now experiencing increased mobility but some tenderness?
 - a) Acute
 - b) Subacute
 - c) Chronic
 - d) Recovery

5. While developing an exercise program prescription, health professionals must consider the following EXCEPT?
- a) Fitness level
 - b) Fitness goals
 - c) Nutrition level
 - d) Exercise preferences
6. If you're looking to improve the functional excursion of your ankles for better balance, you might focus on exercises that:
- a) Strengthen the quadriceps muscles.
 - b) Increase dorsiflexion
 - c) Target the hamstrings for hamstring flexibility.
 - d) Develop isometric core strength
7. Which of the following is NOT a core reason for therapeutically giving patients range of motion exercises?
- a) Maintain joint and soft tissue mobility
 - b) Minimize loss of tissue flexibility
 - c) Prevent contracture formation
 - d) Increase muscle strength
8. A person has undergone surgery on their elbow. Their doctor recommends passive ROM exercises after the incision heals. What is the PRIMARY benefit of these exercises?
- (a) Help maintain the patient's awareness of movement
 - (b) To decrease scar tissue formation
 - (c) To improve cardiovascular fitness
 - (d) To maintain and improve mobility of the contractile tissues

9. A patient is recovering from a shoulder injury and has some limitations in moving their arm due to weakness. Which of the following describes a situation where active-assisted ROM exercises would be beneficial?
- a) The patient has full pain-free range of motion in their shoulder.
 - b) The patient has significant pain when attempting to move their shoulder actively.
 - c) The patient can move their shoulder through a small range of motion on their own.
 - d) The patient's shoulder is completely immobilized in a shoulder sling
10. The following are specific goals for active range of motion exercises. Which one is NOT?
- a) Improve balance and body's awareness to its position
 - b) Provide sensory feedback from the contracting muscles.
 - c) Maintain physiological elasticity and contractility of the participating muscles.
 - d) Improve blood circulation during the exercises to prevent complications
11. An 80-year-old female patient with a fractured hip is admitted in the hospital. The orthopedic surgeon as requested for physiotherapy. The patient reports sharp pain in her hip during AAROM exercises. Which of the following is an important precaution to take when initiating AAROM exercises for this patient?
- a) Use heavy weights to increase resistance
 - b) Provide maximum support to minimize movement
 - c) Encourage the patient to push through the pain
 - d) Allow the patient to perform exercises independently
12. Which intervention is MOST appropriate for this patient (Q10) instead of AAROM?
- a) Passive range of motion (PROM) exercises
 - b) Strengthening exercises
 - c) Active range of motion exercises
 - d) Balance training

13. The following statements accurately describes accessory movements in joint mobilization. Which one does NOT?
- a) This are movements in the joint and surrounding tissues that are necessary for normal ROM
 - b) This movements cannot be performed actively by the patient
 - c) They require significant muscle activation to move the joint.
 - d) This movements are associated to component motions and joint play.
14. A 75-year-old woman with severe osteoporosis presents with knee pain following a minor fall. She has significant swelling and tenderness around the knee joint. She complains of a lot of pain when moving the knee. X-rays reveal a displaced tibial plateau fracture. Which of the following is a contraindication for joint mobilization in this scenario?
- (a) Tibial plateau fracture
 - (b) Osteoporosis
 - (c) Pain
 - (d) Swelling
15. During the acute stage, the primary goal of treatment is to:
- a) Improve flexibility
 - b) Reduce inflammation and pain
 - c) Increase strength
 - d) Regain full range of motion
16. Which of the following joints in the body does NOT allow for spinning an accessory movement in the joint?
- a) Shoulder joint with flexion and extension
 - b) Hip joint during flexion and extension
 - c) Wrist joint during pronation and supination
 - d) Elbow joint during flexion and extension

17. Which of the following is NOT a benefit of intermittent compressive loads applied to joints?
- a) Increased blood and synovial flow
 - b) Improved proprioception
 - c) Reduced inflammation
 - d) Maintain range of motion
18. Sarah, a 48-year-old woman, complains of pain and stiffness in her right shoulder for the past 6 months. The pain makes it difficult for her to reach behind her back and fasten her bra. On examination, the physical therapist finds a limited range of motion in Sarah's right shoulder, particularly with reaching movements. What is the MOST likely indication for joint mobilization in this scenario?
- a) Reduce inflammation in the shoulder joint
 - b) Strengthen the muscles around the shoulder
 - c) Improve flexibility and range of motion in the shoulder joint
 - d) Active ROM to improve limitation of the shoulder joint
19. David, a 23-year-old construction worker, sprained his ankle playing basketball two weeks ago. The pain and swelling have mostly subsided, but his ankle feels stiff and he isn't confident walking on uneven surfaces. Which of the following forms of exercise is suited for David?
- a) Joint mobilization with stretching exercises
 - b) Joint mobilization only
 - c) Joint mobilization with resisted exercises
 - d) None of the above
20. A 25-year-old athlete presents with mild right ankle stiffness following a lateral ankle sprain two weeks ago. They report occasional pain (2/10 on a pain scale) at the end range of dorsiflexion. There are no signs of ligamentous instability. Select the MOST appropriate grade of mobilization for this scenario.
- a) Grade II
 - b) Grade III
 - c) Grade I
 - d) None of the above

21. During soft tissue healing, what can happen to collagen fibers if they are not adequately stressed?
- a) They dissolve and disappear.
 - b) They become more flexible and elastic.
 - c) They adhere to surrounding tissue and form a restricting scar.
 - d) They break down and weaken the healing tissue.
22. A 70-year-old patient with osteoarthritis of the knee complains of significant stiffness and pain (8/10) during flexion activities. Which grade of mobilization is MOST appropriate?
- a) Grade I
 - b) Grade II
 - c) Grade III
 - d) Grade IV
23. During a bicep curl exercise, which of the following exercises targets the bicep muscle most effectively with proper alignment?
- a) Standing bicep curl with palms facing down (supinated grip)
 - b) Standing bicep curl with palms facing up (pronated grip)
 - c) Seated bicep curl with dumbbells
 - d) Hammer curl with palms facing inwards
24. You're a fitness instructor creating an exercise program for a client with a body weight of 70 kg. You want to determine appropriate starting weights for resistance exercises which will be done using weights. What is the appropriate starting weight for performing bench press?
- a) 35Kg
 - b) 21Kg
 - c) 25Kg
 - d) 31Kg

25. A young athlete with a complete ACL tear surgically repaired 6 weeks ago is undergoing physiotherapy. Which of the following exercises should the physiotherapist likely AVOID incorporating into the rehabilitation program at this stage?
- a) Hamstring isometric exercises
 - b) Quadriceps strengthening exercises with a resistance band
 - c) Light stationary cycling
 - d) Quadriceps strengthening exercises with heavy weights
26. John recently recovered from a sports injury that limited his range of motion. His doctor recommends exercises to regain strength and flexibility without putting stress on his healing muscles. What would be the best exercise option for John?
- a) Resistance exercises
 - b) Aquatic exercises with resistance bands
 - c) Plyometric exercises
 - d) Active ROM exercises
27. Which of the following is NOT a cause of chronic inflammation on the soft tissues of body joints?
- a) Cumulative trauma
 - b) Re-injury to an old injury
 - c) Repetitive trauma
 - d) Nerve injury
28. The following are contra-indications of resistance exercise. Which of the following is NOT?
- a) Severe cardiopulmonary disease
 - b) Acute inflammation of the joint
 - c) Patient with sedentary lifestyle
 - d) Severe joint and muscle pain
29. Acute soft tissue injuries are characterized by all of the following EXCEPT:
- a) Sudden onset of pain
 - b) Swelling
 - c) Loss of function
 - d) Gradual worsening of symptoms over days

30. After an injury, inflammation subsides and tissue repair begins. How many weeks does this subacute stage typically last?
- a) Less than 1 week
 - b) 2-3 weeks
 - c) Approximately 1 week
 - d) More than 6 weeks

Section B.

31. What is the difference between muscle power and muscle endurance (2 Marks)
32. While the Valsalva maneuver can help with core stability during resistance training, Explain some of the negative effects of this maneuver on fitness clients (4 Marks).
33. Discuss the overload principle of resistance exercises (4 Marks).
34. Briefly explain how to train a patient to improve on muscular endurance (4 Marks)
35. Discuss 3 contributing factors associated with cumulative strain on joint's soft tissues leading to chronic inflammation of the joint (6 Marks)

Section C

36. Michael is camping with friends and while playing soccer, he twists his ankle landing awkwardly. The pain is immediate and sharp, and has difficulty putting any weight on it. He is rushed to a nearby facilitate where he is cleared of any fracture. There's some swelling around the ankle joint by now. It's been 2 days since the injury and the pain has subsided slightly, but swelling persists. He has been referred for physiotherapy.

Using the management guidelines for soft tissue, outline the plan of care for this patient outlining the aims of treatment and the interventions to achieve the stated aims (20 Marks)?