(University of Choice)

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

MAIN CAMPUS

UNIVERSITY EXAMINATIONS 2022/2023 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 12TH APRIL 2023 **TIME:2:00-4:00 PM**

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

1. In a pulley maximum resistance force is produced when the angle of pulley is
   A. In line with the moving bone
   B. 900 to the moving bone
   C. 600 with moving bone
   D. 450 with the moving bone
2. Knee flexion in prone lying is an example of_____.
   A. 1st order lever
   B. 2nd order lever
   C. 3rd order lever
   D. 4th order lever
3. Ankle DF/PF takes place _____.
   A. Saggital plane & frontal axis
   B. Frontal plane & saggital axis
   C. Transverse plane & vertical axis
   D. Coronal plane & horizontal axis
4. Anterior pelvic tilt is produced by _____.
   A. Hip extensors and abdominal
   B. Hip flexors and lumbar extensors
   C. Hip adductors and trunk side flexors
   D. Non of the above
5. Joint mobilization is contraindicated in _____.
   A. Soft tissue tightness
   B. Joint stiffness
   C. Loose body inside the joint
   D. Bursitis
6. Glenohumeral anterior glide can improve
   A. Extension range
   B. Flexion range
   C. Extension and external rotation
   D. Flexion and internal rotation range
7. Ankle traction can improve _____ range of motion.
   A. Plantar flexion
   B. Dorsi flexion
   C. Inversion
   D. Eversion
8. The fixed point in axial suspension is _____.
   A. Vertically above the axis of the joint
   B. Vertically above the cg of the part
   C. Sideways to the anatomical axis of the joint
   D. Sideways to the CG of the part
9. Pendular suspension is used to improve the JROM by shifting the fixed point ___
   A. Towards the direction of motion
   B. Opposite to the direction of motion
   C. Upward
   D. Downward

10. In axial suspension the part rests in ____ position.
    A. Neutral
    B. Away from neutral
    C. Above the supporting surface
    D. Flexion
11. Double pulley rope is used to support heavy body part, it becomes
    A. Difficult to elevate the part by lifting the wooden cleat up
    B. Possible to do 3-d movements
    C. Easy to elevate the part by pulling the wooden cleat down
    D. Non of the above
12. Frenkel's exercises are devised to improve co-ordination by use of sight, sound and touch in case of ataxia due to_____.
    A. Cerebellar lesion
    B. Loss of kinesthetic sensation
    C. Spastic paralysis
    D. Flaccid paralysis
13. Progression of Frenkel's exercise is made by alteration of ____.
    A. Speed- Quick to slow
    B. Range- wider to smaller
    C. Complexity of exercises
    D. All of the above
14. Which of the following PNF techniques is used in Cerebellar ataxia?
    A. Repeated contraction
    B. Hold & relax
    C. Rhythmic initiation
    D. Rhythmic stabilization
15. Mitchell technique of relaxation is based on the principle of _____
    A. Reciprocal innervations
    B. Autogenic inhibition
    C. Cue controlled relaxation
    D. Released only
16. Choose the correct progression of ambulation by a pair of auxiliary crutches_____.
    A. 2 point, 3 point , 4 point
    B. 4 point, 3 point, 2 point
    C. 3 point, 4 point, 2 point
    D. 2 point, 4 point, 3 point
17. In any exercise programme for 1 MET increase of exercise level systolic blood pressure rises by
    A. 5 – 7 mmHg
    B. 7 – 10 mmHg
    C. 10 – 12 mmHg
    D. 12 – 15 mmHg
18. While descending the stairs, the therapist must stand_____.
    A. Behind the patient
    B. Behind the patient towards the weaker side

C. In front of the patient
D. In front of the patient towards the weaker side

19. If stair climbing has to be improved which exercises should be done?
    A. Closed chain concentric
    B. Closed chain concentric & eccentric
    C. Closed and open chain concentric & eccentric
    D. Open chain concentric exercises
20. Movement on the surface of the water is _____.
    A. Assisted buoyancy
    B. Supported buoyancy
    C. Supported hydrostatic pressure
    D. Resisted by the displaced water

SECTION B: SHORT ANSWER QUESTIONS (SAQ) **40 MARKS**
ANSWER ALL QUESTIONS.

1. Kevin attained distal tib/fib fracture one week ago. You have been called to train him on stair training with elbow crutches. Describe on how you will train Kevin on ascending and descending the stairs (5 marks)
2. A patient presents to the clinic with hip and back pain. On examination, you find out that the Thomas test is positive and there is a positive Trendelenberg sign
    a) Identify the type of exercises the patient needs (2 marks)
    b) For each of the exercises identified above, instruct the patient on how to perform them (3 marks)
3. Aerobic exercises is very vital in exercise prescription.
    a) What is the FIT principle when giving aerobic exercises? (3 marks)
    b) What are the recommendations of aerobic exercises by American College of Sports Medicine (5 marks)
4. Describe the upper crossed syndrome according to Janda (5 marks)
5. Explain the most important physical laws of water that physiotherapist should understand and apply when giving hydrotherapy (5 marks)
6. Describe stabilization exercises for erector spinae with criteria for progression for each exercise (5 marks)
7. State the physiological effects of hydrotherapy (5 marks)
8. Describe the different walking patterns when using a walking aid (5 marks)

SECTION C: LONG ANSWER QUESTIONS (LAQS) **40 MARKS**
ANSWER ALL QUESTIONS EACH ONE IS 20 MARKS

1. Mr. Magulu a long-distance bus driver comes into the clinic with low back pain radiating to the left leg. He states that the pain started one month ago, and he has been using pain killers. On observation, he has an anterior pelvic tilt. After your assessment, you conclude that he has a disk herniation.
    a) Describe a test to rule in disk herniation (5 marks)
    b) Describe the exercise to centralize the pain (10 marks)
    c) Discuss how the anterior pelvic tilt might contribute to the low back pain (5 marks)
2. A 22-year-old female presents with left side neck pain with an onset of approximately 6 months ago. She is a graduate student (law school) and reports she has been extremely busy in school. She also reports she is planning her wedding, which will occur in 3 months. She cannot recall any previous trauma. The current complaint is pain with rotating the neck and bending the neck to the left side. Her past medical history is unremarkable. Examination: she has forward head posture with increased cervical lordosis and no deviation in the frontal plane. Bilateral upper extremity strength and sensation are normal and symmetrical. Cervical range of motion is approximately 25% limited with side flexion and bilateral rotation.
    a) Based on this information, discuss the impairments and functional limitations and type of intervention to be used (10 marks)
    b) Develop a sequence of treatment techniques that you would use during the first visit. Include instructions and precautions (10 marks)