

**BOWEN UNIVERSITY, IWO**  
**BACHELOR OF PHYSIOTHERAPY PROGRAMME**  
**2021/2022 SESSION FIRST SEMESTER EXAMINATION**  
**COURSE CODE/TITLE: PST 510– Manipulative Therapy**  
**DATE: Thursday- 11<sup>th</sup> May, 2022 TOTAL TIME: 2 HOURS 30 MINUTES**

**Matriculation Number:** .....

**INSTRUCTION:** Attempt all questions in both sections (A and B)

**SECTION A**

**Instruction:** For Questions 1 to 18, and 76 to 80, choose from the options labelled a-d, the option that best answers each question.

1. The following are true of passive movement except .....
  - (a) Passive mobilization is under the patient's control
  - (b) manipulations of joint are single movements of small amplitude
  - (c) accessory movements cannot be isolated by the physiotherapist
  - (d) if a surgeon or physician performs a manipulation to gain range, the range must be maintained by the physiotherapist
2. Passive movements are indicated in all of the following conditions except .....
  - (a) Unconscious patient with pressure sores and ulceration (b) CVA patient with power 1 (c) Patient with acute golfer's elbow (d) immediately after hip arthroplasty
3. Which of the following does not qualify as a passive movement?
  - (a) moving the affected joint during assessment of medial epicondylitis (b) a person sitting and being rocked against the back of the chair (c) movement to maintain joint range (d) none of the above
4. All the following are examples of recognised passive movements except:
  - (a) an external force on the neck by the physiotherapist (b) a movement of muscles that are too weak to perform the movement (c) a movement to induce sleep (d) none of the above
5. The following categories of individuals qualify for passive movement except .....
  - (a) athletes aspiring for greater length of muscular structures (b) babies with congenital deformity (c) persons with shortened structures due to adaptive shortening (d) none of the above
6. Stretching is ....
  - (a) a slow but forced passive movement (b) a controlled but sudden passive movement (c) a relaxed passive movement (d) a form of manipulation
7. Passive movement by the physiotherapist has ..... effect on depression or patient's mental health
  - (a) secondary (b) negative (c) positive (d) no
8. It takes the joint beyond the voluntary and usual normal range of motion but within its anatomical limits; this statement is talking about: (a) forced passive movement (b) relaxed passive movement (c) manipulation (d) thrust
9. A technique that can be utilized to assess dysfunction, increase joint range of motion, decrease pain, and improve healing (a) mobilization (b) gliding (c) manipulation (d) manual therapy
10. The grade of mobilization that activates the superficial layer of the joint capsule - Bulbous corpuscles is: (a) I (b) II (c) III (d) IV
11. Present in the joint that assist in the reduction or manipulation of pain intensity during manual therapy technique is (a) proprioceptors (b) mechanoreceptors (c) nociceptors (d) all of the above

12. A physiotherapy technique that can induce relaxation; change muscle function and modulate pain is called: (a) mobilization (b) manual therapy (c) manipulation (d) gliding
13. Joint mobilization addresses the following except: (a) arthrokinematic joint motion (b) osteokinematic joint motion (c) joint gliding (d) painful and stiff synovial joints
14. The following are correct about oscillatory movements except: (a) it should be in the direction of spinning, gliding, rolling (b) it should be opposite the direction of the joint's accessory motions (c) it should be in line with distractive motions that occur between joint surfaces (d) none of the above
15. All these traction techniques are practiced by a physician except one: (a) skin (b) skeletal (c) auto (d) Gardner well
16. Joint mobilization is usually targeted at (a) synovial joint (b) hinge joint (c) arthrodiar point (d) all types of joint
17. Oscillatory movement involves the following except: (a) spinning (b) gliding, c (c) distraction (d) rotation
18. Which one is not correct about grade II mobilization techniques? (a) large amplitude (b) rhythmically oscillating (c) joint glide near the resting position (d) none of the above

**Instruction for Questions 19 to 27: Given the following options-**

- (a) Intermittent Mechanical Traction (b) Gravity lumbar traction (c) Manual Traction (d) Auto-traction (e) Positional Traction

**From the options (a-e) provided, indicate the correct answer to each question in the space provided in front of each statement.**

19. The weight of the lower half of the body provides a traction force
20. Is applied by placing the patient in various positions using pillows
21. The patient provides the traction force by pulling with the arms and/or pushing with the feet
22. Is applied as the clinician's hands and/or a belt are used to pull on the patient's legs
23. Alternately apply and release the traction force at pre-set intervals
24. Applied for a few seconds duration or can be applied as a sudden, quick thrust
25. utilizes a specially designed table that is divided into two sections that can be individually tilted and rotated
26. It usually incorporates lateral bending and is only affected to one side of the spinal segment
27. Involves using a chest harness to secure the patient as the treatment table is tilted to a vertical position

**Instruction for Questions 28 to 33: Consider the following tests:** (a) Spurling's test (b) foraminal compression test (c) cervical compression test (d) extension compression test (e) cervical distraction test

**Write the appropriate option for the listed statements in front of each statement.**

28. A positive test is the reduction or elimination of symptoms with traction
29. Is used to test cervical spine facet joints
30. This test assesses the integrity of the intervertebral disc
31. Pressure is applied when the head is toward the side of the symptoms
32. Assessment of the cervical spine when looking for cervical nerve root compression
33. Is positive either the pain is contralateral or ipsilateral

**Instruction for Questions 34 to 41: Consider the following tests:** (a) Quick (b) Schober's (c) Trendelenburg (d) Slump (e) Straight leg raising

**Write the appropriate option for the listed statements in front of each statement.**

34. To determine whether a patient with low back pain has an underlying herniated disc, often located at L5.
35. Patient is seated upright with hands held together behind his/her back and the examiner instructs to the patient to flex his/her spine followed by neck flexion
36. The patient is asked balance on one leg and go up and down the on the toe 4 or 5 times
37. Patient is asked to squat as far as possible, bounces two to three times and return to the standing position
38. Test for the limitation of flexion of the spine
39. The action tests the ankles, knee and hips as well as sacrum for any pathology simultaneously
40. A positive sign is caused by weak gluteus medius muscle or coxa vara
41. The patient is unable to complete the movement, by the patient going up and down, on the toes, S1 nerve root may be suspected

**Instruction for Questions 42 to 47: Answer TRUE or FALSE**

Consider leg length discrepancy for the following questions, **indicate TRUE or FALSE in front of each statement.**

42. It should be performed if the examiner suspect a Hip joint lesion
43. Nutation of ilium on the sacrum results in increase in leg length
44. Contra-nutation means anterior rotation
45. If the iliac bone on one side is lower, the leg on that side is usually shorter
46. A difference of 1 to 1.3cm is normal
47. Real leg length is measured from the posterior-superior iliac spine to the medial malleolus

**Instruction for Questions 48 to 50: Answer TRUE or FALSE**

Considering the usage of cervical traction, **indicate TRUE or FALSE**

48. The treatment may elicit some pain
49. It may even lead to fainting
50. Patient may experience a filling such as headache, dizziness, and nausea

**Instruction for Questions 51 to 57: Answer TRUE or FALSE**

Some of the advantages of skin traction are

51. Distal oedema
52. Vascular obstruction
53. Peroneal nerve palsy
54. Skin Necrosis over bony prominences
55. If the tapes slip, use skeletal traction if possible
56. It is easy to apply
57. There is no need to raise the foot section of the bed

**Instruction for Questions 58 to 65: fill in the gaps with the appropriate sentences.**

58. Active stretching involves: .....
59. Ballistic stretching involves: .....

- 60. Pre-contraction stretching involves: .....
- 61. The most common type of pre-contraction stretching is: .....
- 62. Stretching generally focuses on: .....
- 63. Muscle can be shortened through passive mechanism, this includes: .....
- 64. Actively, muscles can become shorter through: .....
- 65. 5 Examples of dynamic stretch exercises are: .....

**Instruction for Questions 66 to 75: Define the following/ fill in the gap appropriately:**

- 66. Postural syndromes: .....
- 67. Derangement syndromes: .....
- 68. Dysfunction syndromes: .....
- 69. Specific manipulation: .....
- 70. Non-specific manipulation: .....
- 71. Direct manipulation: .....
- 72. Indirect manipulation: .....
- 73. What is the long term goal of McKenzie method of manipulation? .....

.....  
.....  
74. Mention 2 direct methods of manipulation according to Nwugarian techniques:

(i).....(ii).....

75. According to Maitland concept, enumerate the grading of mobilization techniques

- Grade I-  
.....
- Grade II – .....  
.....
- Grade III - .....  
.....
- Grade IV .....  
.....

76. Which of the following is untrue regarding the use of continuous passive movement? (a) it can be used when sleeping (b) it can be operating while drinking and chatting (c) it can be self-regulated (d) it can be used when an individual is at the beach

77. The guidelines for continuous passive motion (CPM) permits all the following except (a) always start with the CPM set at a low arc of around 20° (b) an arc of 30°, 45° and 50° for Day one, Day 2 and Day 3 respectively, indicates increase at a steady pace (c) duration for CPM is usually 60 minutes per session, 3 times a day (d) a rate of complete to and fro motion, each cycle per 45 seconds per 2 minutes is well tolerated by all, no matter the debilitation

78. Which of the following does not qualify as passive movement? (a) moving the elbow joint during assessment for golfer's elbow by the therapist (b) a person sitting on a mechanised chair being rocked mechanically to and fro against the back of the chair (c) movement to maintain joint range (d) none of the above

79. The following are true of passive movements except (a) a movement to maintain connective tissue mobility (b) a movement to prevent muscle atrophy (c) a movement to inhibit pain (d) none of the above



80. The device shown- regenerates hyaline cartilage. (a) always true (b) never true (c) indeterminate (d) sometimes true

**Instruction for Questions 81 to 85: Consider the following:** (a) Relaxed Passive Movement (b) Forced Passive Movement (c) Continuous Passive Motion

**Write ALL the appropriate option(s) for the listed statements in front of each statement.**

- 81. It is performed within the available or limited range of motion due to pathology
- 82. It is done through the full anatomical range, but not limited range of motion
- 83. It is carried out by an external force
- 84. It is done specially to increase limited range of motion
- 85. There is danger of overextension if techniques is faulty

## SECTION B- LONG ESSAY

**Instruction:** Attempt all questions

- 1) How will you diagnose a patient who came to the physiotherapy department with unilateral cervical radiculopathy; and how will you manage the patient using one Nwugarian and one Mckenzie technique? **(20 marks)**
- 2) Mrs X, a 54 year old woman presents to your physiotherapy clinic on account of stroke. Following assessment, your impression is impaired motor function of right upper and lower limbs secondary to cerebrovascular accident; with the right upper limb having muscle power 0 and right lower limb-power 2, according to the Oxford Scale. Discuss how you will manage the patient with the application of the principles of passive movement. **(15 marks)**
- 3) In a tabular form, clinically differentiate between Natural Apophyseal Gilde (NAG) and Sustained Natural Apophyseal Glide (SNAG) concepts of Mulligan manipulative therapy approach for cervical lesion. **(8 marks)**
- 4) Compare and contrast the following manipulative therapy approaches for lumbar lesion clinically.
  - i. Cyriax Leg-over Technique
  - ii. Nwugarian Lumbar Oscillatory Rotation
  - iii. Nwugarian Lumbar Rotatory Technique**(12 marks)**