



(University of Choice)

**MASINDE MULIRO UNIVERSITY OF
SCIENCE AND TECHNOLOGY
(MMUST)**

MAIN CAMPUS

UNIVERSITY EXAMINATIONS

2020/2021 ACADEMIC YEAR

FIRST TRIMESTER EXAMINATIONS

(DIRECT & UPGRADING)

FOR THE DEGREE

OF

BACHELOR OF SCIENCE IN PHYSIOTHERAPY

COURSE CODE: BSP 237

COURSE TITLE: KINESIOLOGY

DATE: -----

TIME: -----

INSTRUCTIONS TO CANDIDATES

Answer all Questions

Sec A: Multiple Choice Questions (MCQ) 20 Marks

Sec B: Short Answer Questions (SAQ) (40 marks)

Sec C: Long Answer Questions (LAQ) (40 marks)

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TIME: 3 Hours

MMUST observes ZERO tolerance to examination cheating

This Paper Consists of 4 Printed Pages. Please Turn Over.

SECTION A: MULTIPLE CHOICE QUESTIONS**(20 marks)**

- 1) Which of the following terms describes the proximal attachment of a muscle?
 - a) Caudal
 - b) Insertion
 - c) Cephalic
 - d) Origin
- 2) Torticollis is typically caused by:
 - a) Tightness of the lumbar erector spinae muscles
 - b) Tightness of the sternocleidomastoid
 - c) Excessive lateral flexion of the thoracic and lumbar spine
 - d) Weakness of the quadratus lumborum
- 3) Which of the following lever systems is most commonly used by the musculoskeletal systems?
 - a) First class
 - b) Second class
 - c) Third class
 - d) All
- 4) Movements requiring maximum accuracy or involving loads are usually
 - a) Sequential in nature
 - b) Simultaneous in nature
 - c) Segmental in nature
 - d) Concurrent in nature
- 5) All of the following are factors in range of motion EXCEPT
 - a) Joint structure
 - b) Muscle bulk
 - c) Ligamentous structures
 - d) Segment length
- 6) A reduction in joint angle is called
 - a) Abduction
 - b) Adduction
 - c) Flexion
 - d) extension
- 7) Which type of muscle contraction is involved when contraction velocity remains constant?
 - a) Isokinetic
 - b) Isotonic
 - c) Isometric
 - d) Eccentric
- 8) Which of the following categories of motion is mutually exclusive with each of the others?
 - a) Translational motion
 - b) Rectilinear motion
 - c) Rotational motion
 - d) Curvilinear motion
- 9) Which of the following muscles is not considered a quadriceps muscle?
 - a) Semimembranosus
 - b) Vastus intermedius
 - c) Rectus femoris
 - d) Vastus lateralis
 - e) A and C
- 10) A wheelbarrow is an example of which class of lever?
 - a) 1st class

- b) 2nd class
 - c) 3rd class
 - d) 4th class
- 11) What does the center of gravity of an object represent?
 - a) The exact center anatomically
 - b) The geometric center
 - c) The center of the mass of body
 - d) The center of the base of support
 - 12) Which of the following statements is true regarding the external oblique muscle?
 - a) Activation of the right external oblique produces rotation to the left.
 - b) Activation of the right external oblique produces rotation to the right.
 - c) Bilateral activation of the external obliques can produce a posterior pelvic tilt.
 - d) A and C
 - e) B and C
 - 13) The perpendicular distance between the line of force and the axis defines
 - a) Moment arm
 - b) Torque
 - c) Fulcrum
 - d) Vector
 - 14) Which of the following is true of the existence of motion during a "stationary" stance?
 - a) There is no motion.
 - b) There is slight motion forward and backward.
 - c) There is slight motion side to side.
 - d) There is slight motion in all directions.
 - 15) Why is it easier for a runner to move the recovery leg forward more rapidly when it is flexed than when it is extended?
 - a) The mass of the leg is greater when it is flexed.
 - b) The mass of the leg is less when it is flexed.
 - c) The moment of inertia of the leg is greater when it is flexed.
 - d) The moment of inertia of the leg is less when it is flexed.
 - 16) Which of the following terms describes a force acting on a body in a fluid in a direction perpendicular to the fluid flow?
 - a) Wave drag
 - b) Surface drag
 - c) Friction
 - d) Lift
 - 17) A dynamometer measures
 - a) Velocity
 - b) Acceleration
 - c) Force
 - d) Pressure
 - 18) All of the following are examples of sagittal plane movements EXCEPT
 - a) Lateral flexion
 - b) Flexion
 - c) Hyperextension
 - d) Plantar flexion
 - 19) Injury to the tibial nerve most likely will result in weakness of which of the following actions?
 - a) Dorsiflexion
 - b) Plantar flexion
 - c) Eversion
 - d) Extension of digits 1 to 4
 - 20) Which of the following structures is the distal attachment for all heads of the quadriceps?

- a) Tibial plateau
- b) Tibial tuberosity
- c) Pes anserinus
- d) Lateral epicondyle of the femur

SECTION B: SHORT ANSWER QUESTIONS**(40 MARKS)**

- 1) Describe the three-primary classification of joints and give an anatomical example of each
- 2) Cite the normal ranges of motion for the hip joint
- 3) Explain the primary muscular interaction involved in performing a pushing and pulling motion
- 4) Differentiate between open chain and closed chain movements. Highlight and describe different arthrokinematic movements
- 5) Explain why the lateral ligaments of the ankle are injured far more often than the medial ligaments

SECTION C: LONG ANSWER QUESTIONS**(40 Marks)****Answer any 2 questions:**

- 1) Discuss the principles of ergonomics
- 2) Deliberate on the factors that affect movement
- 3) a) Differentiate between axes and planes: Analyze the 3 body planes highlighting at least 3 joint motions that occur in those planes
b) Outline Newtons Laws of motion describing the clinical significance and examples
- 4) Forces:
 - a. Discuss the features of a force
 - b. Describe in detail the excessive forces that are responsible for fractures