



NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SSC4204

FACULTY OF APPLIED SCIENCES

DEPARTMENT OF SPORTS SCIENCE AND COACHING

CONVENTIONAL/BLOCK RELEASE PROGRAMME

SSC4204: APPLIED BIOMECHANICS

EXAMINATION QUESTION PAPER

MARCH 2025

This examination question paper consists of 2 pages

TIME ALLOWED: 3 HOURS
TOTAL MARKS: 100
SPECIAL REQUIREMENTS: NIL
EXAMINER'S NAME: MR E M TAPERA

INSTRUCTIONS

- 1) Answer any 4 questions.
- 2) Each question carries 25 marks.
- 3) Where a question contains subdivisions, the mark value for each subdivision is given in brackets.

MARK ALLOCATION

| QUESTION | MARKS |
|----------|-------|
| 1. | 25 |
| 2. | 25 |
| 3. | 25 |
| 4. | 25 |
| 5. | 25 |
| 6. | 25 |
| TOTAL | 100 |

1. Describe Newton's three laws of linear motion using examples from sports. (25 marks)

2. Describe the following terms as used in sports biomechanics:
 - a) Mass (3 marks)
 - b) Weight (3 marks)
 - c) Displacement (3 marks)
 - d) Velocity (3 marks)
 - e) Momentum (3 marks)
 - f) Inertia (3 marks)
 - g) Acceleration (3 marks)
 - h) Force (4 marks)

3. Discuss five principles of ergonomics (25 marks)

4. Describe the process of gait analysis (25 marks)

5. Describe the principles of sports rehabilitation (25 marks)

6. Discuss common sports injuries in a sport of your choice (25 marks)

END OF EXAMINATION