

BINDURA UNIVERSITY OF SCIENCE EDUCATION

FACULTY OF SCIENCE AND ENGINEERING

DEPARTMENT: SPORTS SCIENCE

BACHELOR OF SCIENCE HONOURS DEGREE IN SPORTS SCIENCE AND MANAGEMENT

SSM 123: BIOCHEMISTRY OF PHYSICAL ACTIVITY

DURATION: 3 HOURS

TOTAL MARKS: 100

14 MAR 2023

INSTRUCTIONS TO CANDIDATES

Answer **FOUR** questions.

1. 'Regular physical activity leads to different biochemical changes in the muscle fibers' Discuss.

(25 marks)

2. Describe the anaerobic glycolysis pathway giving examples of sports that utilizes this system.

(25 marks).

3. Discuss the functional particularities of proteins and carbohydrates to the athlete's body (25 marks).

4. Explain the following terms:

a) ATP turnover (6 marks)

b) ATP re-synthesis (6 marks).

c) Glycogenolysis (6 marks)

d) Glycogenesis (7 marks)

5. Elaborate how the following energy systems can be trained most efficiently

a) Anaerobic glycolysis pathway (12 marks)

b) Aerobic pathway
marks)

(13

6. Justify the importance of athletic trainers having knowledge of the biochemistry of physical activity. (25 marks)