

**UNIVERSITY OF BOLTON**  
**SCHOOL OF SPORT AND BIOLOGICAL SCIENCES**  
**SPORT REHABILITATION PATHWAY**  
**SEMESTER ONE EXAMINATIONS 2018/2019**  
**APPLIED PHYSIOLOGY**  
**MODULE NO. SRB5003**

Date: Monday 14 January 2019

Time: 10:00 am - 12:00 pm

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**INSTRUCTIONS TO CANDIDATES:**

There are 6 questions on this paper. You are to answer 4 selected questions in the following manner:

**SECTION A**

ANSWER ALL 3 QUESTIONS

**SECTION B**

ANSWER 1 QUESTION ONLY

**This paper contains 80 marks in total**

**LO4: Verify the principles of nutrition in sports performance – may not be assessed within the written paper as Q.5 is optional.**

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Sport Rehabilitation Pathway  
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Applied Physiology  
Module No. SRB5003

**SECTION A**

**Answer all questions**

1. A professional rugby player has come to the laboratories requesting some physiological tests relating to his sport to assess his current performance.

You are to choose appropriate tests covering 5 fitness components:

Lactate Threshold

Anaerobic Power

Body Composition

Lower Limb Power Output

Lower Limb Flexibility

- a. Describe/outline how you would reliably test each component.

15 marks

- b. Describe the general range of measurement scores that you would expect an athlete of this level to reach for each test stated. State the measurement units.

5 Marks

- c. Discuss how you would practically use each these measures in improving or monitoring the athlete. ▽

10 Marks

**Please turn the page**

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- 2.
- a. Describe the processes and characteristics of ATP re-synthesis via the ATP-PC system  
5 marks
  - b. Outline the processes of glycolysis and oxidative ATP re-synthesis with particular reference to the pathway that pyruvate takes under aerobic and anaerobic conditions.  
15 Marks
3. Discuss the following three fatigue mechanisms, provide working examples of how these could occur along with any specific methods of recovery:
- i. Central fatigue
  - ii. Peripheral fatigue
  - iii. Metabolic fatigue
- 15 Marks

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## SECTION B

### Answer 1 question only

4. A 20 year-old female Tennis player has recently commenced a specific resistance training programme to improve strength and power in the upper and lower limbs.

Discuss the adaptations made in the physiological, neurological and muscular systems that you would expect the tennis player to experience during a 6 month training period.

15 Marks

5. Discuss and justify your choices for food and/or drink based upon the needs of a football player, in relation to:

- i. In the 3 days prior to a match
- ii. Immediately before a match
- iii. During a match
- iv. After the match

15 Marks

6. Discuss and justify your choices of gym-based resistance training exercises when designing a resistance training session for a 200m runner.

- i. Choose 6 key resistance exercises
- ii. State why you have included each of them in the session
- iii. Suggest the load required relating to the intensity you intend the player to train at (i.e. sets and repetitions)

15 Marks

**END OF QUESTIONS**