Section A

Answer three questions.

Answer Question 1 and any two from Question 2, Question 3 or Question 4.

Question 1

In 2012, Jessica Ennis won the Olympic Heptathlon title, which involved running, throwing and jumping over two days of competition, as shown in Figures 1, 2 and 3.

To maximise performance during competition, a performer must develop their flexibility and ensure that their body maintains the correct water and electrolyte balance.

Explain how a performer uses proprioceptive neuromuscular facilitation (PNF) to increase flexibility, and outline the physiological changes that will occur if the correct water and electrolyte balance is not maintained. (14 marks)

Question 2

Heptathletes are required to complete the 200 metre sprint, as shown in Figure 1.

A 200 metre runner must exert a large force in a short period of time to generate an impulse. Sketch and label a graph to show the impulse generated during the acceleration phase of a 200 metre race. (3 marks)

With reference to the Sliding Filament Hypothesis, explain the roles of tropomyosin and troponin during muscle contraction. (4 marks)
Question 3

One event in the heptathlon is the shot put, as shown in Figure 2. This involves one powerful, explosive movement.

Name three factors that affect the distance the shot travels. (1 mark)

Figure 4 shows the flight path of a shot.

Figure 4

Copy Figure 4 and label your diagram to show the changing vertical and horizontal vectors at the following points:

- the point of release
- the highest point of flight
- the point immediately before landing. (3 marks)

Explain how energy is provided, allowing the athlete to complete the shot put. (3 marks)

Question 4

Athletes must have sufficient energy stores to compete and perform in a variety of weather conditions.

Identify the energy sources that a performer may use during competition. (3 marks)

Thermoregulation is essential in maintaining the correct body temperature.

Explain how thermoregulation is achieved by the body during exercise. (4 marks)

Turn over for the next section
Section B

Answer three questions.

Answer Question 5 and any two from Question 6, Question 7 or Question 8.

Question 5

Sporting contests require the performer’s full commitment, both physically and psychologically. The performance of some individuals can be hindered by over-arousal.

Explain, using appropriate psychological theories, the possible causes of aggressive behaviour during sporting contests and suggest strategies that a coach could use to develop the assertive behaviour of a performer. (14 marks)

Question 6

Elite performers have to develop high levels of self-confidence to optimise their performance.

What do you understand by the term learned helplessness? (3 marks)

Explain how the self-efficacy of a performer may be improved. (4 marks)
Question 7

The performer and the coach must work together so that the performer can control their arousal levels during a competition.

1 2 Identify three characteristics of the peak flow experience.  

(3 marks)

Figure 5 shows Chelladurai’s multi-dimensional model of leadership.

![Figure 5](image)

When quality of performance and levels of satisfaction are high, optimal levels of arousal are more likely.

1 3 Use Figure 5 to explain how a coach can help the performer to reach optimal levels of arousal.  

(4 marks)

Question 8

Many elite performers complete personality and anxiety tests as part of their preparation for competition.

1 4 Name one self-report questionnaire often used to measure anxiety and outline the disadvantages of using this form of data collection.  

(3 marks)

1 5 How can knowledge of the interactionist theory of personality help a coach to improve the performance of an individual player?  

(4 marks)

Turn over for the next section
Section C

Answer three questions.

Answer Question 9 and any two from Question 10, Question 11 or Question 12.

Question 9

The modern Olympic Games have changed in nature and size since Baron Pierre de Coubertin organised the 1896 Athens Games, which involved only amateur performers competing in nine sports.

1 6 Explain the social factors and the support programmes in the UK that encourage the development of elite athletes and increase the chance of winning medals. (14 marks)

Question 10

The 19th century English public schools had a major impact on the development of rational recreation and the sporting values of the modern Olympic Games.

1 7 What are the similarities between the sporting values of the 19th century English public schools and the modern Olympic Games? (3 marks)

1 8 Explain how, during the 19th century, ex-public school boys influenced the development of sport in the UK and around the world. (4 marks)

Question 11

At the London 2012 Olympic Games, billions of people watched both amateurs and professionals competing in 26 sports.

1 9 Suggest reasons why the International Olympic Committee (IOC) has allowed professional performers to compete at the Olympic Games in recent years. (3 marks)

2 0 Discuss the suggestion that the increased media coverage of elite sport has had a positive impact on coaches. (4 marks)
Question 12

There have been many examples of deviancy throughout the history of the modern Olympic Games, even though all performers agree to the Olympic Oath.

2 1 Explain the terms positive deviancy and negative deviancy. Use practical examples to support your answer. (3 marks)

2 2 Suggest reasons why there have been very few instances of spectator violence at the modern Olympic Games compared with some other major sporting events. (4 marks)

END OF QUESTIONS
There are no questions printed on this page