

Write your name here

Surname					Other names					
Pearson BTEC Level 3 Nationals Certificate	Centre Number					Learner Registration Number				
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<h1>Sport</h1> <h2>Unit 1: Anatomy and Physiology</h2>										
Wednesday 7 June 2017 – Morning						Paper Reference				
Time: 1 hour 30 minutes						31524H				
You do not need any other materials.									Total Marks	

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*

Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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SECTION A: The Skeletal System for Sports Performance

Answer ALL questions. Write your answers in the spaces provided.

Figure 1 shows the regions of the vertebral column.

1 (a) Identify the regions labelled **B** and **E**.

(2)

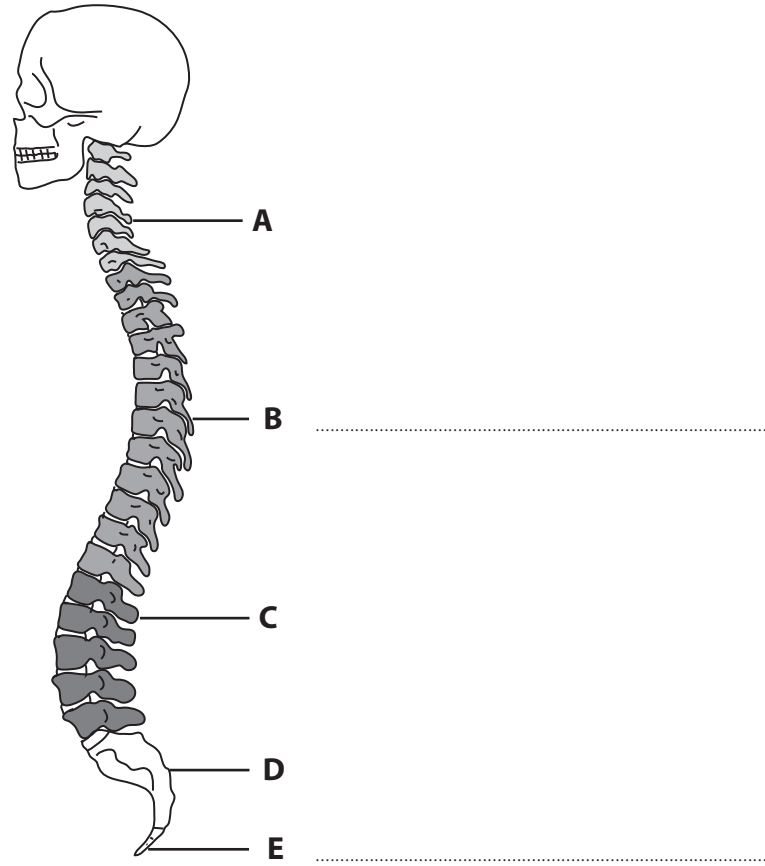


Figure 1

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(b) Describe the process of bone growth.

(4)

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(Total for Question 1 = 6 marks)

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SECTION B: The Muscular System for Sports Performance

Answer ALL questions. Write your answers in the spaces provided.

Skeletal muscle is one type of muscle tissue.

3 State **one** other type of muscle tissue **and** its location in the body.

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(Total for Question 3 = 2 marks)

Sonia is a footballer playing in a cup final.

The final has gone into extra time and she develops cramp in her leg.

4 (a) Explain how cramp will affect Sonia's performance.

(4)

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Sonia follows a sustained exercise programme and her muscular system starts to show adaptations. One adaptation is an increase in her muscle myoglobin stores.

(b) Explain how an increase in myoglobin stores will benefit Sonia's football performance.

(4)

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SECTION C: The Respiratory System for Sports Performance

Answer ALL questions. Write your answers in the spaces provided.

5 (a) State the meaning of the term 'pulmonary ventilation' (VE). (1)

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(b) Give a typical value of pulmonary ventilation (VE) for a performer at rest. (1)

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(Total for Question 5 = 2 marks)

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Marcos is a marathon runner.

- 6 (a) Explain the role of Marcos's internal and external intercostal muscles during inspiration and expiration.

(4)

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Gas exchange occurs so that Marcos's body receives oxygen from the air he breaths in.

- (b) Explain the process of gaseous exchange of oxygen at the alveoli during a marathon.

(4)

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Clarissa has just completed her time trial.

Figure 4 shows Clarissa's rest, exercise and recovery period.

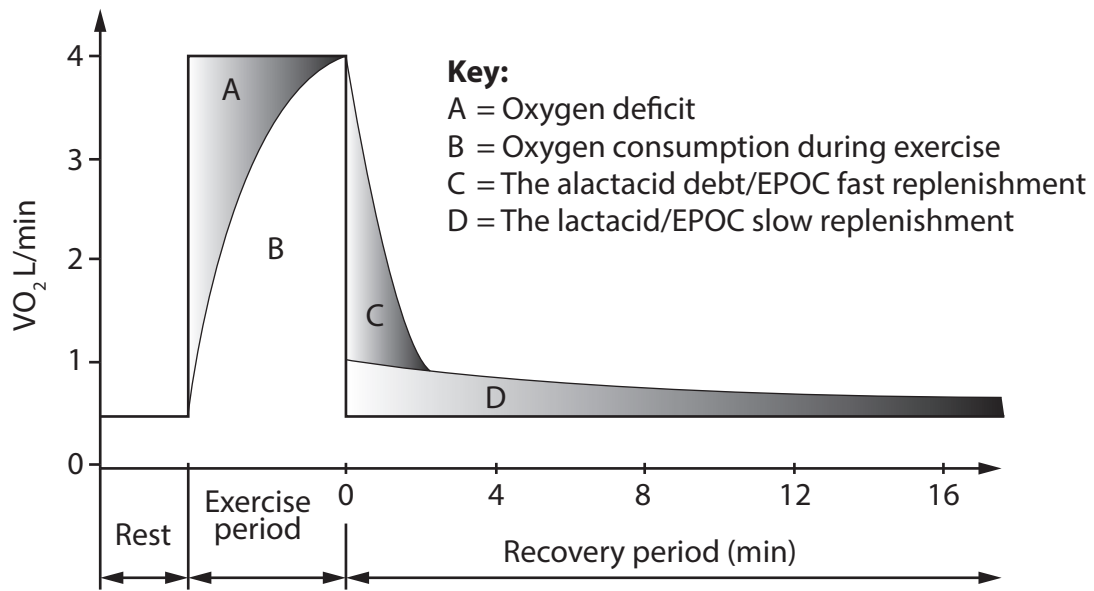


Figure 4

(b) Explain the section labelled C, that is the alactacid component of Clarissa's recovery process.

(5)

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(Total for Question 11 = 8 marks)

TOTAL FOR SECTION F = 8 MARKS
TOTAL FOR PAPER = 90 MARKS



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