

Centre No.						Paper Reference						Surname	Initial(s)	
Candidate No.						1	8	2	7	/	0	1	Signature	

Paper Reference(s)

1827/01

Edexcel GCSE

Physical Education

Paper 1

Friday 21 May 2010 – Afternoon

Time: 1 hour 45 minutes

Examiner's use only

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Team Leader's use only

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Materials required for examination

Nil

Items included with question papers

Nil

Question Number	Leave Blank
1	
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17	
Total	

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature.

Check that you have the correct question paper. Answer ALL the questions.

Do not use pencil. Use blue or black ink.

For Section ONE: For each question, choose an answer, A, B, C or D, and put a cross in the box (⊗).

Mark only one answer for each question. If you change your mind about an answer, put a line through the box (⊗) and then mark your new answer with a cross (⊗).

Write your answers to Sections TWO and THREE in the spaces provided.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. (2).

There are 17 questions in this question paper. The total mark for this paper is 150.

There are 24 pages in this question paper. Any blank pages are indicated.

Advice to Candidates

You are reminded of the importance of clear English and orderly presentation in your answers.

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SECTION ONE

Answer ALL the questions.

For each question, choose an answer, A, B, C or D, and put a cross in the box (☒). Mark only one answer for each question. If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

e.g.: Mark the box like this:

If you change your mind, mark the boxes like this:

<input type="checkbox"/> A
<input type="checkbox"/> B
<input checked="" type="checkbox"/> C <i>This shows your answer</i>
<input type="checkbox"/> D

<input checked="" type="checkbox"/> A <i>This shows your final answer</i>
<input type="checkbox"/> B
<input checked="" type="checkbox"/> C <i>First answer</i>
<input type="checkbox"/> D

1. (a) Which of the following statements gives the correct definition of fitness?

- A A form of physical activity done primarily to improve one's health and physical fitness
- B The ability to meet the demands of the environment
- C The range of movement possible at a joint, the greater the range the fitter the individual
- D A capability of the heart, blood, lungs and muscles to function at optimum efficiency

(1)

(b) Which of the following statements relates to the principle of overload in training?

- A Making the body work harder to increase fitness
- B Making the body work too hard resulting in injury
- C To continue training despite injury to increase fitness
- D Having a regular training session where the performer runs with weights

(1)



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(c) Which of the following statements describes an isotonic muscle contraction?

- A Muscle contraction with no physical movement
- B A constant state of tension in the muscle even when 'at rest'
- C Muscle contraction resulting in movement
- D When a muscle relaxes to allow another muscle to contract

(1)

(d) Which of the following demonstrates the effective use of power?

- A A weight lifter slowly lifting a 5KG weight
- B A tennis player serving an 'Ace' so his opponent cannot return the ball
- C A gymnast holding a handstand
- D A sprinter **hearing** the starter's gun and responding by starting to move out of the blocks immediately

(1)

(e) Athlete's foot is:

- A an increase in foot size as a result of over training
- B a virus
- C a fungus
- D an injury associated with long distance runners

(1)

(f) In which of the following situations should the recovery position be used?

- A After a hard training session
- B As part of rehabilitation training after injury
- C When a performer is injured and unconscious but breathing
- D When a performer is injured and has pulled a muscle

(1)

(g) Which of the following is an accurate statement?

- A Oxygenated blood always travels away from the heart
- B Veins only carry deoxygenated blood
- C Capillaries are the smallest of the blood vessels
- D Arteries contain valves

(1)



H 3 6 5 4 2 A 0 3 2 4

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(h) What type of bone is a vertebra?

- A Flat
- B Short
- C Long
- D Irregular

(1)

(i) Which of the following is a true statement?

- A Fast twitch muscle fibres have high levels of endurance
- B Slow twitch muscle fibres tire easily
- C Slow twitch muscle fibres produce powerful muscle contractions
- D Fast twitch muscle fibres are used in anaerobic activities

(1)

(j) Which statement gives a description and example of an involuntary muscle?

- A This muscles never tires, for example cardiac muscle
- B This muscle type is not consciously controlled, for example the muscles in the digestive system
- C This type of muscle requires conscious thought in order to use it, for example, the muscles in the eye
- D This muscle only works when asked to do so consciously, for example the trapezius

(1)

Q1

(Total 10 marks)

TOTAL FOR SECTION ONE: 10 MARKS



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SECTION TWO

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

2. (a) Complete the statements below by identifying the type of benefit of physical activity.

(i) Increased fitness is a benefit of physical activity. **(1)**

(ii) Improvement in health is a benefit of physical activity. **(1)**

(iii) Providing opportunity to work as a team is a benefit of physical activity. **(1)**

(iv) Physical activity can lead to stress relief. This is a benefit of physical activity. **(1)**

(b) Do you think the following statement is true or false? Explain your answer.

‘As people age their reasons for exercising change.’

True or False?

Explanation

.....

.....

..... **(2)**

(c) Why could the following statement be considered false?

‘Losing weight makes you look better, therefore feel better.’

.....

.....

..... **(2)**

(Total 8 marks) **Q2**



3. (a) The terms in the box below are components of skill-related fitness or health-related exercise.





Muscular endurance	Cardiovascular endurance
Coordination	Muscular strength

For each performer in the table below:

(i) select the **most** important component from the box above (4)

(ii) explain your selection. (8)

You may **only** use each component once.

Performer	(i) Most important component	(ii) Why this is the most important component
Weight lifter holding weight above head 		
Rower eight minutes into the race 		
Long distance runner one hour into the marathon 		
Golfer taking a putt 		



<p>(b) Which aspect of skill-related fitness is most important in each of the following situations?</p> <p>Do not use any component of skill-related fitness identified in part (a).</p> <p>(i) A gymnast running across the floor in preparation for a vault (1)</p> <p>(ii) A high jumper at take off (1)</p> <p>(iii) A goalkeeper diving to save a deflected shot on goal (1)</p> <p style="text-align: right;">(Total 15 marks)</p>	<p>Leave blank</p> <p style="text-align: center;">Q3</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>
<p>4. Specificity and meeting individual needs are two principles of training. Explain the meaning of each principle and the difference between them.</p> <p>Specificity</p> <p>.....</p> <p>.....</p> <p>Individual needs</p> <p>.....</p> <p>.....</p> <p>Difference</p> <p>.....</p> <p>.....</p> <p style="text-align: right;">(Total 3 marks)</p>	<p style="text-align: center;">Q4</p> <div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto;"></div>



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5. Describe the principle of thresholds of training **and** explain why a sprinter is likely to work at a higher percentage of her training threshold than a long distance runner.

.....
.....
.....
.....
.....

(Total 3 marks)

Q5

6. Taking part in exercise will affect the body systems. Complete the table below by identifying for each of the body systems:

(a) an immediate effect of exercise (3)

(b) the effect of regular training and exercise. (4)

Body system	(a) Immediate effect of exercise	(b) Effect of regular training and exercise
Respiratory		
Circulatory		
Skeletal		
Muscular		

(Total 7 marks)

Q6



7. Despite their difference in size the performers in Figure 1 are at the **optimum weight** for their activity.



Figure 1

(a) Explain the term **optimum weight**.

.....
.....
..... (2)

(b) Optimum weight will be different for different individuals even if they are competing in the same event. State **two** factors that will cause optimum weight to vary.

.....
.....
..... (2)

(Total 4 marks)

Q7



Leave blank

8. The following are rules taken from a variety of games. Identify the reason for each of the following groups of rules:

Group 1:

- In hockey players must not lift their stick over the heads of other players.
- In boxing a boxer is only allowed to use his gloves to make contact with his opponent, so using the elbows or a head butt is not allowed.

Reason for these types of rules:

.....

Group 2:

- In the long jump event in athletics, the jump is measured from the nearest break in the landing area made by any part of your body to the front edge of the take off board.
- In football a 'goal' is scored by depositing the ball into the opponent's goal.

Reason for these types of rules:

.....

Group 3:

- In netball players have three seconds between catching the ball and making a pass.
- In basketball a team in possession of the ball must attempt a field goal within 24 seconds after gaining possession of the ball.

Reason for these types of rules:

.....

(Total 3 marks)

Q8



9. Complete the following table by:

(a) Matching the items of safety equipment to a relevant activity (5)

(b) Explaining why the items are needed in this activity (5)

Use a **different** activity for each answer.

Item of safety equipment	(a) Activity where used	(b) Why it is needed for activity
Shin guards 		
Gum shield 		
Padding around posts 		
Landing mats 		
Buoyancy aids 		

(Total 10 marks)

Q9



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blank

10. (a) Name the term being described in each of the following statements.

(i) The number of times the heart beats each minute.

.....
(1)

(ii) The amount of air breathed in or out of the lungs in one breath.

.....
(1)

(iii) The volume of blood pumped out of the heart by each ventricle during one contraction.

.....
(1)

(b) Which two of the terms used in your answer to (a) combine to give cardiac output?

.....
(1)

(Total 4 marks)

Q10



11. Figure 2 shows a representation of the lungs during inspiration and expiration.

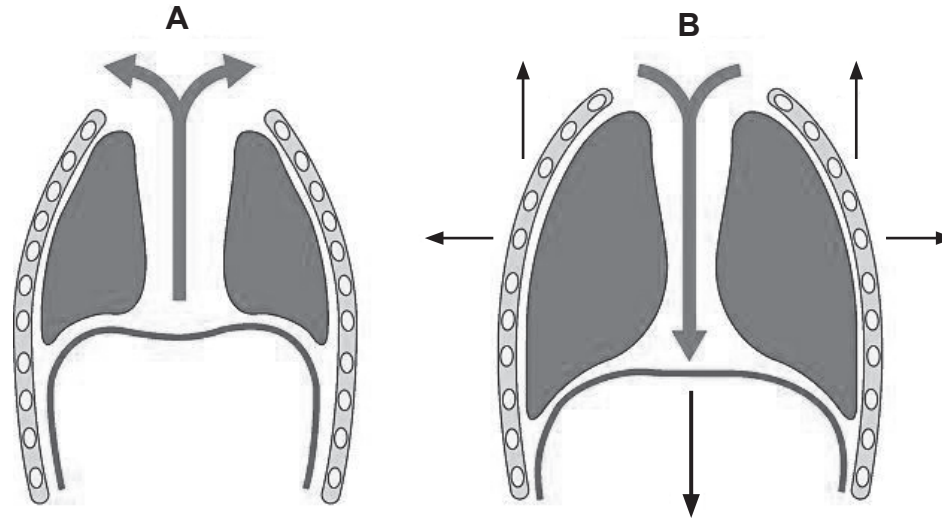


Figure 2

(a) (i) Which of the diagrams, **A** or **B**, represents inspiration?

..... (1)

(ii) Give **three** reasons why you have selected this diagram.

- 1
 - 2
 - 3
- (3)

(b) (i) How does the percentage of oxygen in the lungs differ during inspiration compared to expiration?

..... (1)

(ii) Why is there a difference in the percentage of oxygen in the lungs during inspiration compared to expiration?

.....
..... (2)



<p>(c) (i) What other significant gas is present in the lungs during expiration?</p> <p>.....</p> <p style="text-align: right;">(1)</p> <p>(ii) What happens to the percentage concentration of this gas during inspiration compared to expiration?</p> <p>.....</p> <p style="text-align: right;">(1)</p> <p style="text-align: right;">(Total 9 marks)</p>	<p>Leave blank</p> <p>Q11</p> <input type="text"/>
<p>12. Complete the following statements about the formation and composition of bones.</p> <p>Long bones are formed through a process called</p> <p>There are two types of bone within a long bone, spongy bone is found in the centre and</p> <p>..... bone at the edges.</p> <p>The is the region at the head of the bone. It is here that growth takes place after birth.</p> <p>Cartilage is replaced with spongy bone during periods of growth, but can still be found where the bone forms a with another bone.</p> <p style="text-align: right;">(Total 4 marks)</p>	<p>Q12</p> <input type="text"/>



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13. Name the type of synovial joint found at the neck and the hip and state the range of movement possible at these joints.

(a) (i) Type of joint at the atlas and axis.

.....
(1)

(ii) Range of movement at the atlas and axis

1

2 and
(2)

(b) (i) Type of joint at the hip.

.....
(1)

(ii) Additional range of movement at the hip not possible at the neck.

.....
(1)

(Total 5 marks)

Q13

15

Turn over



14. Complete the statements below by identifying which muscles are contracting to allow the squash player in **Figure 3** to achieve the described actions.



Figure 3

- (a) The racket arm is bent at the elbow due to the contraction of the (1)
- (b) The leading leg is straight at the knee due to the contraction of the (1)
- (c) The player pushes off the toes of the trailing leg due to the contraction of the (1)
- (d) The non racket arm has been taken away from the body at the shoulder by the contraction of the to help the player maintain balance. (1)
- (e) The player rotates at the trunk as she strikes the ball and follows through due to the contraction of the (1)

(Total 5 marks)

Q14

TOTAL FOR SECTION TWO: 80 MARKS



SECTION THREE

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

15. Mr Sutton has been running fitness classes after school for his GCSE PE students. He thinks it is important that people exercise regularly.

(a) (i) What is the link between health and exercise? Give an example to support your answer.

.....
.....
(2)

(ii) What is the link between fitness and performance?

.....
.....
.....
(2)

(b) The fitness sessions always start with a warm up.

(i) State the phases (in the correct order) that you would expect to be included in a warm up.

.....
.....
.....
(3)

(ii) Apart from reducing injury give **three** other reasons for warming up before exercise.

.....
.....
.....
.....
(3)



(c) (i) Name a common injury that can occur as a result of not warming up before exercise.

..... (1)

(ii) How is this common injury treated?

..... (1)

(d) (i) If a performer is injured and prevented from training over a period of time, what principle of training will be applied?

..... (1)

The graph in **Figure 4** shows resting heart rate values recorded over a number of weeks for three different performers who are in training.

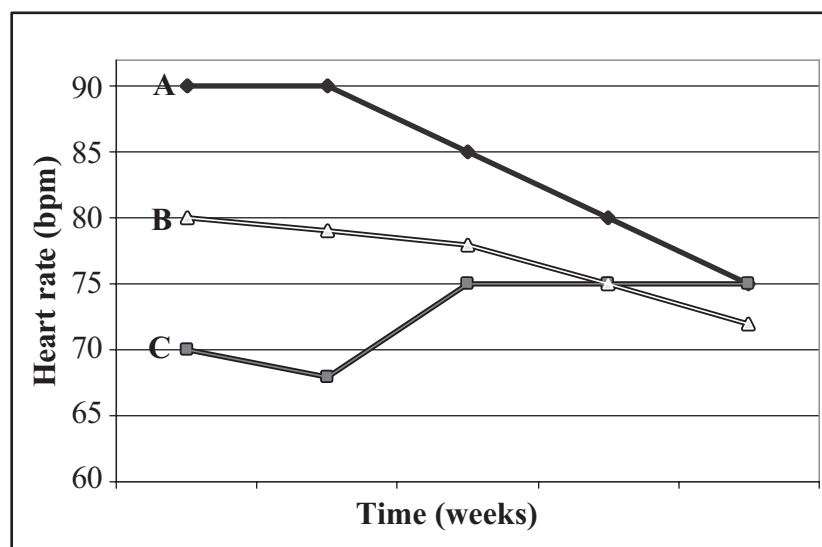


Figure 4

(ii) Which performer, A, B or C, shows signs of experiencing injury? (1)

(iii) Give **two** reasons for your answer.

1

.....

2

..... (2)



Leave
blank

(e) If a performer is unable to train for an extended period of time, how should they change their diet and why?

.....
.....
.....

(2)

(f) What **two** principles of training should a performer apply to ensure they do not work too hard on their return to training?

.....
.....

(2)

Q15

(Total 20 marks)

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16. Jade and Hope were planning their Personal Exercise Programmes and considering their different training requirements.

(a) Jade runs long distances.

(i) What is the role of the cardiovascular system?

.....
.....
(1)

(ii) How does it aid performance in distance events?

.....
.....
(2)

(iii) Hope is a sprinter. How is the cardiovascular system important to Hope in relation to her event?

.....
.....
(1)

(b) At various points during their training sessions Jade and Hope experience oxygen debt.

(i) Explain the term 'oxygen debt'.

.....
.....
.....
(3)

(ii) Does an oxygen debt occur as a result of working aerobically or anaerobically?

.....
(1)

(iii) If Jade and Hope understand the reasons for oxygen debt occurring, how might this affect the planning of their training sessions?

.....
.....
.....
(2)



Leave blank

(c) One of the girls uses circuit training to improve her fitness for her event.

(i) Describe **three** main principles of circuit training.

1

2

3

(3)

(ii) Which of the girls, Jade (the long distance runner) or Hope (the sprinter) is most likely to use circuit training?

.....

(1)

(d) What other training method might each girl use to improve their fitness for their activity?

(i) Jade (long distance runner)

(1)

(ii) Hope (sprinter)

(1)

(e) If the girls had the 'typical extreme' body types for their events, what body type would each girl be likely to have? Give **one** advantage of each.

(i) Jade's body type (long distance runner)

Advantage of this body type (for long distance running)

.....

(2)

(ii) Hope's body type (sprinter)

Advantage of this body type (for sprinting)

.....

(2)

(Total 20 marks)

Q16

--	--



17. To help with their GCSE PE revision, Melona and Shaun made revision tables on the skeletal and muscular system.

(a) Complete the revision table below by:

- (i) classifying the bones as either long, flat or short (3)
- (ii) explaining the function of each type of bone (3)
- (iii) matching each performer in **Figure 5** to the most appropriate bone function for the action they are performing. (3)
- (iv) explaining how your chosen performer is using the bone function (3)

Only use each performer in Figure 5 once.

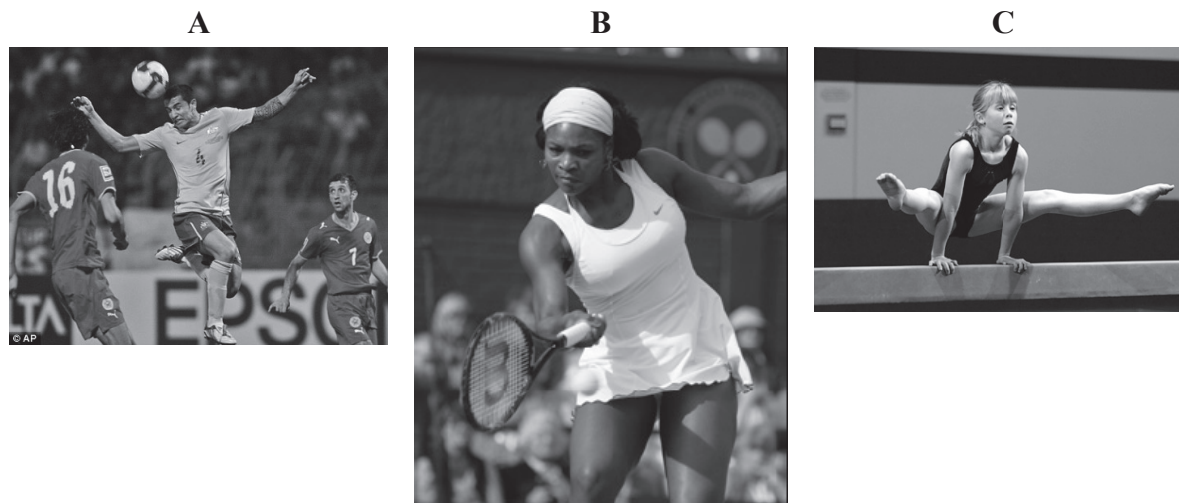


Figure 5

Bone	(i) Classification of bone type	(ii) Function of bone type	(iii)	(iv)
			Performer using bone function	Explanation of use
Carpals				
Cranium				
Humerus				



(b) **Figure 6** is a diagram of the knee joint.

Figure 7 shows a badminton player about to play a shot.

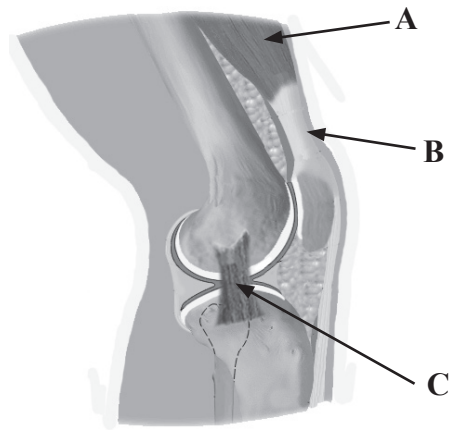


Figure 6



Figure 7

Complete the table below by:

- (i) naming the components of the joint labelled A, B and C in Figure 6 (3)
- (ii) explaining the function of these components (3)
- (iii) explaining how these components are used by the badminton player in Figure 7. (2)

Component	(i) Name	(ii) Function	(iii) How it is used by the badminton player
A			
B			
C			

(Total 20 marks)

Q17

TOTAL FOR SECTION THREE: 60 MARKS
TOTAL FOR PAPER: 150 MARKS

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