

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4421/01

PHYSICAL EDUCATION

Unit 1

P.M. WEDNESDAY, 23 May 2012

1½ hours

Suitable for Modified Language Candidates

ADDITIONAL MATERIALS

DVD.

Section A

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use pencil or gel pen. Do not use correction fluid.

Write your name, centre number and candidate number in the spaces at the top of this page.

Section B

Answer **all** questions in the spaces provided in this booklet.

If you run out of space, use the continuation page at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The clips for Questions 1 and 2 in Section A will be shown three times.

Before the clips are shown you will have five minutes to read the questions. Two clips will be shown during which time you may answer the questions and make notes.

The clips will be shown a second time, there will be five minutes after each clip to answer the questions.

The clips will be shown for a third and final time.

There will then be approximately seventy minutes to complete Sections A and B.

The number of marks is given in brackets at the end of each question or part-question.

You are reminded that assessment will take into account the quality of written communication used in your answers that involve extended writing in Section A (Q3 (b) and (c)) and Section B (Q.9, Q.10).

For Examiner's use only		
Question	Maximum mark	Mark awarded
1	16	
2	16	
3	18	
Section A Total	50	
4	12	
5	8	
6	6	
7	6	
8	4	
9	6	
10	8	
Section B Total	50	
Overall Total		

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010001



M A Y 1 2 4 4 2 1 0 1 0 1

SECTION A

Answer all the questions in the spaces provided.

1. Look at the video clip of Mountain Biking.

- (a) (i) Identify **three** components of fitness seen in the mountain biking clip. Explain your answer. [6]

Component of Fitness	Explanation
1.
2.
3.

- (ii) Define each of the components of fitness identified in your first answer, (a)(i). [3]

Component of Fitness	Definition
1.
2.
3.



(b) (i) Describe, in detail, the procedures to test **two** components of fitness identified in (a)(i). [5]

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(ii) Why is it important to follow correct procedures when fitness testing? Explain your answer. [2]

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Total 16 Marks

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2. Look at the video clip of Netball.

(a) The four main fitness components are demonstrated in the netball clip.

- Agility
- Speed
- Flexibility
- Balance

Describe how each of the components of fitness are used in the clip.

[4]

Component of Fitness	Description
Agility
Speed
Flexibility
Balance

(b) (i) Identify **one other** physical fitness component demonstrated in the clip.

[1]

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(ii) Explain your answer given in (b)(i).

[2]

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- (c) (i) Identify **one** method of fitness training that could be used to help to develop speed. Tick (✓) **one** box only. [1]

Interval training	<input type="checkbox"/>
Skill session	<input type="checkbox"/>
Continuous training	<input type="checkbox"/>
Stretching	<input type="checkbox"/>

- (ii) Choose a sporting activity. How can the method of training you identified in (c)(i) improve performance in this activity? [2]

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- (iii) Why do athletes cool down at the end of a high intensity game? Choose two reasons. Tick (✓) **two** boxes only. [2]

To socialise	<input type="checkbox"/>
To aid recovery	<input type="checkbox"/>
To remove waste products	<input type="checkbox"/>
To analyse performance	<input type="checkbox"/>
To lose weight	<input type="checkbox"/>

- (iv) Give **two** other ways athletes can speed up the recovery process. Do not choose cool downs. Tick (✓) **two** boxes only. [2]

Listening to music	<input type="checkbox"/>
Eating carbohydrates	<input type="checkbox"/>
High intensity training	<input type="checkbox"/>
Ice baths	<input type="checkbox"/>
Sleeping	<input type="checkbox"/>



(d) Name **two** ways that netballers could control body fat.
Tick (✓) **two** boxes only.

[2]

- Exercising
- Balanced diet
- Having a sedentary life style
- Drinking alcohol
- Reducing training

Total 16 Marks

3. (a) (i) Give **two** reasons why companies such as McDonalds want to sponsor the Olympic Games.
Tick (✓) **two** boxes only.

[2]

- Talent identification
- Advertising
- Improve performance
- Increase accessibility
- Improve sales
- Raise money

(ii) Suggest **two** ways in which **sport** can benefit from having sponsorship.

[2]

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(iii) Suggest **two** other ways, in which **sport** can be funded. Do not choose sponsorship. [2]

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(b) Mens' and womens' sport should have equal media coverage in the 2012 London Olympics. Discuss this statement. [6]

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SECTION B

Answer all the questions in the space provided.

4. (a) The table below explains when the **three** main ENERGY SYSTEMS are used during physical activity. [3]

Tick (✓) the ENERGY SYSTEM which matches the correct explanation.

WHEN NEEDED	ATP-PC	LACTIC ACID	AEROBIC
During low intensity exercise.			
During high intensity exercise lasting between 10 seconds and 3 minutes.			
During high intensity exercise lasting up to 10 seconds			

- (b) During physical activity the muscles demand more: [1]

Tick (✓) **one** box only.

- CO₂
- Adrenaline
- Glucose and O₂
- Lactic Acid

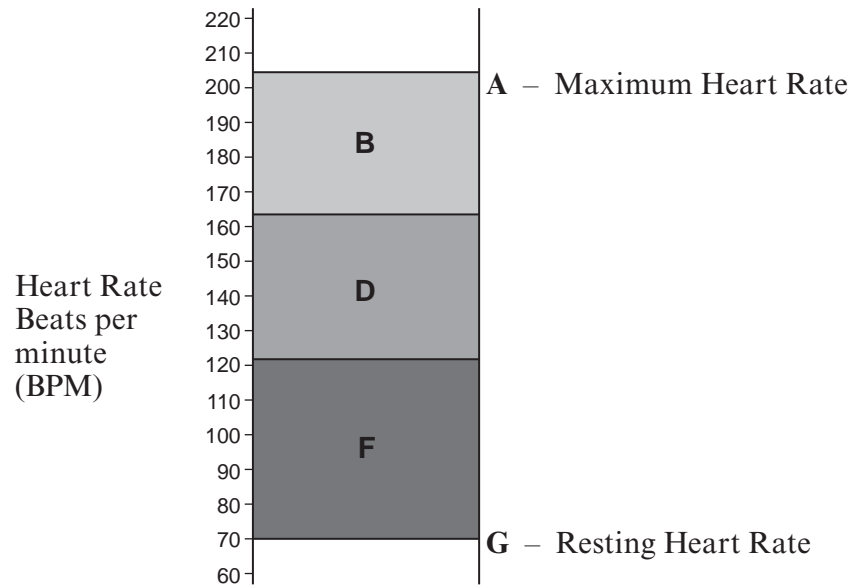
- (c) Which of the following NUTRIENTS provides ENERGY for high intensity physical activity? [1]

Tick (✓) **one** box only.

- Fibre
- Water
- Carbohydrate
- Protein



(d) The graph shows the different TRAINING ZONES for a 16 year old athlete.



(i) In which Training Zone does the athlete need to work to improve the ANAEROBIC ENERGY SYSTEM? [1]

Tick (✓) **one** box only.

- B**
- D**
- F**

(ii) Explain your answer given in (d)(i). [1]

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(iii) In which Training Zone does the athlete need to work to improve the AEROBIC ENERGY SYSTEM? [1]

Tick (✓) **one** box only.

- B**
- D**
- F**



(iv) Explain your given answer in (d)(iii).

[1]

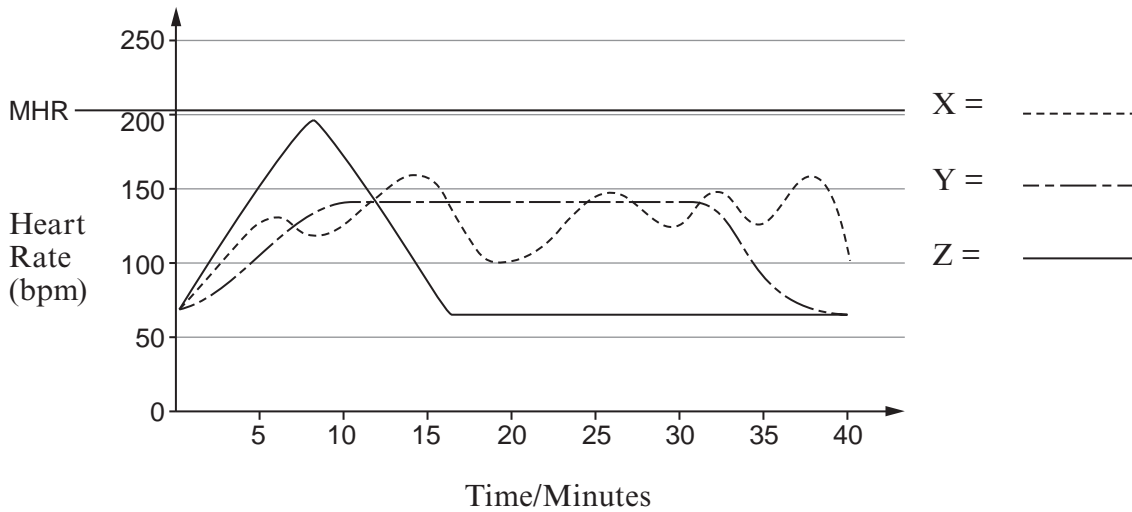
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(e) The graph shows the HEART RATES - X, Y, Z, for three 16 year old sports performers.



X =
 Y =
 Z =

(i) Which HEART RATE suggests an ANAEROBIC ACTIVITY?

Tick (✓) **one** box only.

[1]

X

Y

Z

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

[2]

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Total 12 marks



5. (a) (i) Complete the table below to explain the main differences between FAST and SLOW TWITCH MUSCLE FIBRES.

	FAST TWITCH	SLOW TWITCH
SPEED OF CONTRACTION	•	•
FORCE GENERATED	•	•
FATIGUE	•	•

[3]

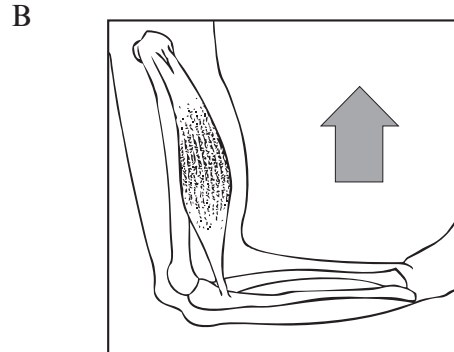
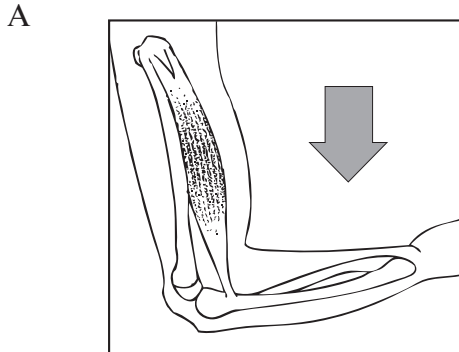
- (ii) Give **two** SPORTING examples to show the importance of each fibre type for different sports.

	SPORTING EXAMPLE
• FAST TWITCH	
• SLOW TWITCH	

[2]



(b) The diagrams below show the two types of ISOTONIC MUSCLE CONTRACTION - CONCENTRIC and ECCENTRIC.



(i) Which diagram shows the CONCENTRIC CONTRACTION?

Tick (✓) **one** box only.

A

B

[1]

(ii) Which diagram shows the ECCENTRIC CONTRACTION?

Tick (✓) **one** box only.

A

B

[1]

(iii) Explain your answers to (b)(i) and (ii).

[1]

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Total 8 marks



6. The following GOALS (targets) were listed by some GCSE Physical Education Students:-

- A. To agree with my PE teacher to play better tennis.
- B. To improve my javelin throw by 20 metres next week.
- C. To improve my 100 metre front crawl personal best time by 2 seconds during summer training.
- D. To get into the school dance production.

(a) Explain which GOAL (target) is most helpful. [4]

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(b) Suggest **two** strategies which could be used to make sure of ADHERENCE in a physical activity. [2]

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Total 6 marks

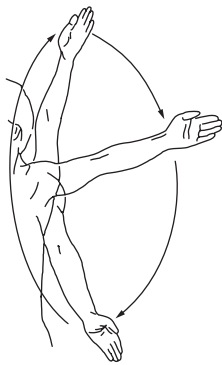


7. The diagrams below show a range of movement that can occur around a joint.

(a) Match the following movements to the diagrams, 1, 2 and 3.

[3]

- Flexion / Extension
- Circumduction
- Abduction / Adduction



1. 2. 3.

(b) Where might the movements shown in the diagrams occur? Give three other specific examples from sporting activity. [3]

1.

 2.

 3.

Total 6 marks



8. Choose a physical activity. Explain **four** SAFETY PRECAUTIONS you have taken to minimise the risk of injury.

NAMED PHYSICAL ACTIVITY:-

<p>SAFETY PRECAUTION 1:-</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>SAFETY PRECAUTION 2:-</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>
<p>SAFETY PRECAUTION 3:-</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>	<p>SAFETY PRECAUTION 4:-</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

[4]

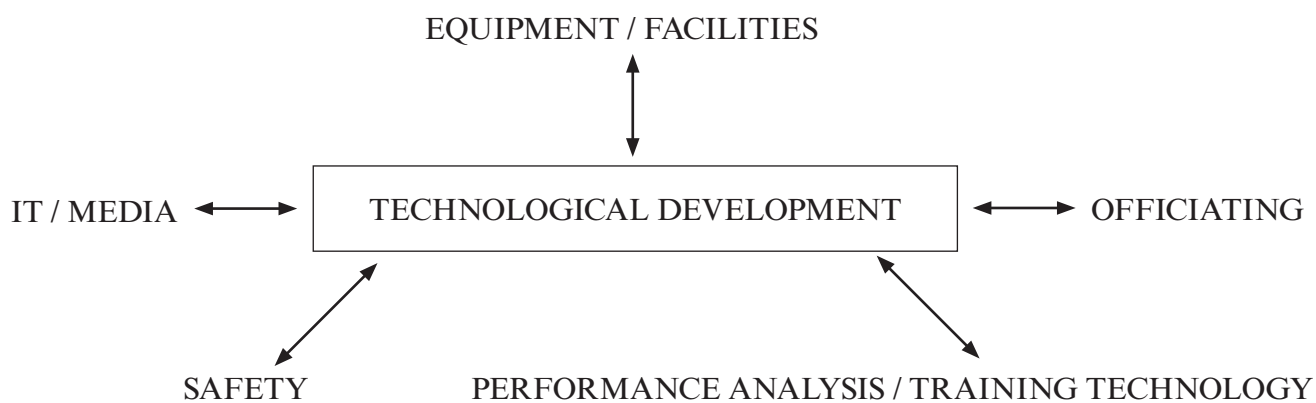
Total 4 marks



10. 'Technology has affected development in physical activity at all levels.'

Discuss this statement, using the diagram below to guide you:-

[8]



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