

Surname	Centre Number	Candidate Number
Other Names		0



GCSE

4421/01

PHYSICAL EDUCATION

Unit 1

P.M. WEDNESDAY, 23 May 2012

1½ hours

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		

4421
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M A Y 1 2 4 4 2 1 0 1 0 1

SECTION A

Answer all the questions in the spaces provided.

1. 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 (a)(i). [3]

Component of Fitness	Definition
1.
2.
3.



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

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(ii) Explain why it is important to follow correct procedures when fitness testing. [2]

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Total 16 Marks



2. Video clip of Netball.

(a) The following are the four main fitness components 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 in developing speed.

Tick (✓) **one** box only.

[1]

Interval training

Skill session

Continuous training

Stretching

- (ii) Describe how the method of training you identified in (c)(i) could improve performance in a sporting activity of your choice.

[2]

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- (iii) Identify **two** reasons why athletes cool down at the end of a high intensity game.

Tick (✓) **two** boxes only.

[2]

To socialise

To aid recovery

To remove waste products

To analyse performance

To lose weight

- (iv) Other than cool downs, give **two** ways athletes can speed up the recovery process.

Tick (✓) **two** boxes only.

[2]

Listening to music

Eating carbohydrates

High intensity training

Ice baths

Sleeping



(d) Name **two** ways that netballers could regulate 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** ways, other than sponsorship, in which **sport** can be funded. [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) Below is a table explaining when the **three** main ENERGY SYSTEMS are used during physical activity. [3]

Tick (✓) the ENERGY SYSTEM which matches the appropriate 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

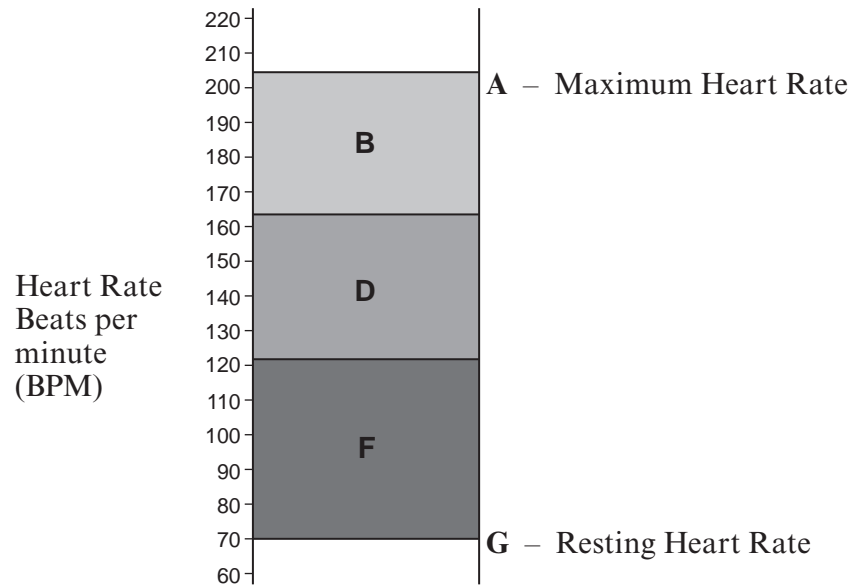
- (c) Which of the following NUTRIENTS provides ENERGY for high intensity physical activity? [1]

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]

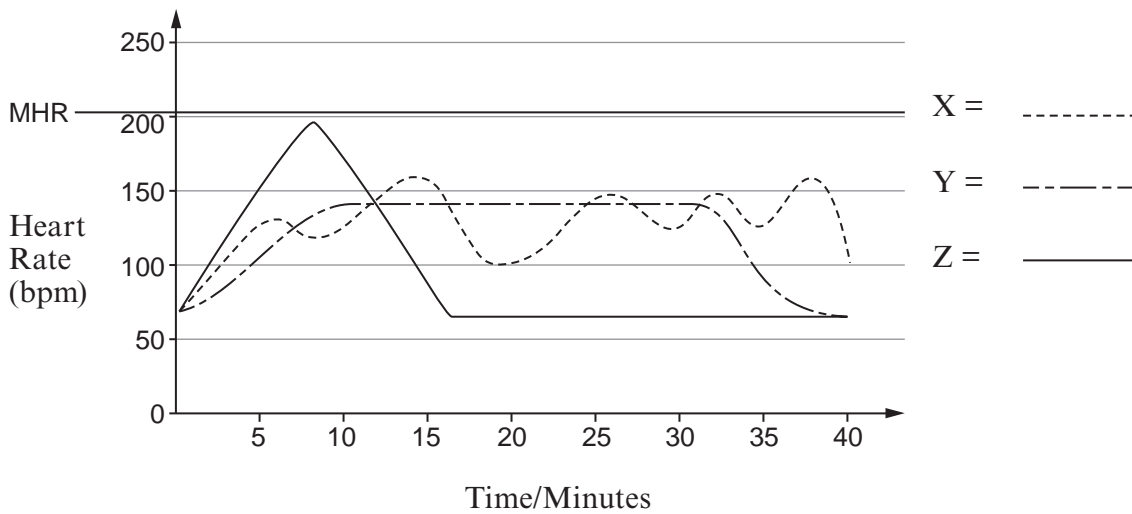
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(e) The graph shows the HEART RATES - X, Y, Z, for three 16 year old sports performers.



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]

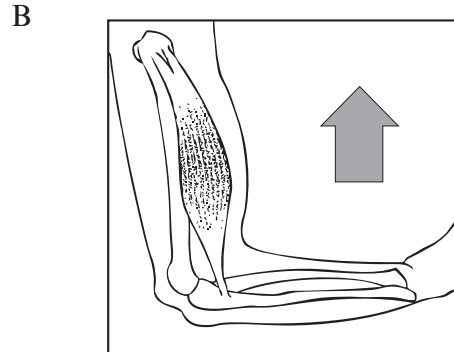
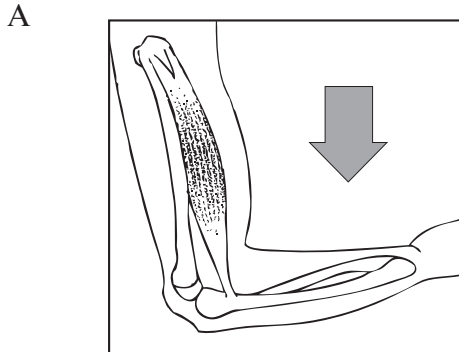
- (ii) Give **two** SPORTING examples to show the importance of each fibre type for different sports.

	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 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. After discussion with my PE teacher 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 is most helpful. [4]

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

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Total 6 marks



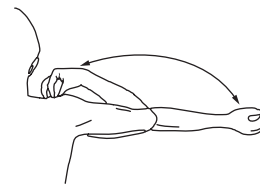
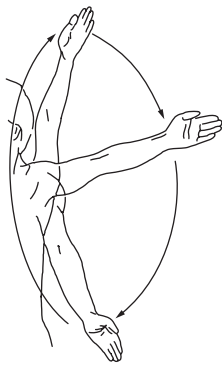
7. The diagrams below show a range of movement that can occur around a joint.

(a) Match the following movements:-

[3]

- Flexion / Extension
- Circumduction
- Abduction / Adduction

to the diagrams, 1, 2, and 3.



1. 2. 3.

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

1.

 2.

 3.

Total 6 marks



8. In a named physical activity of your choice 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>SAFETY PRECAUTION 2:-</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>SAFETY PRECAUTION 4:-</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p> <p>.....</p>

[4]

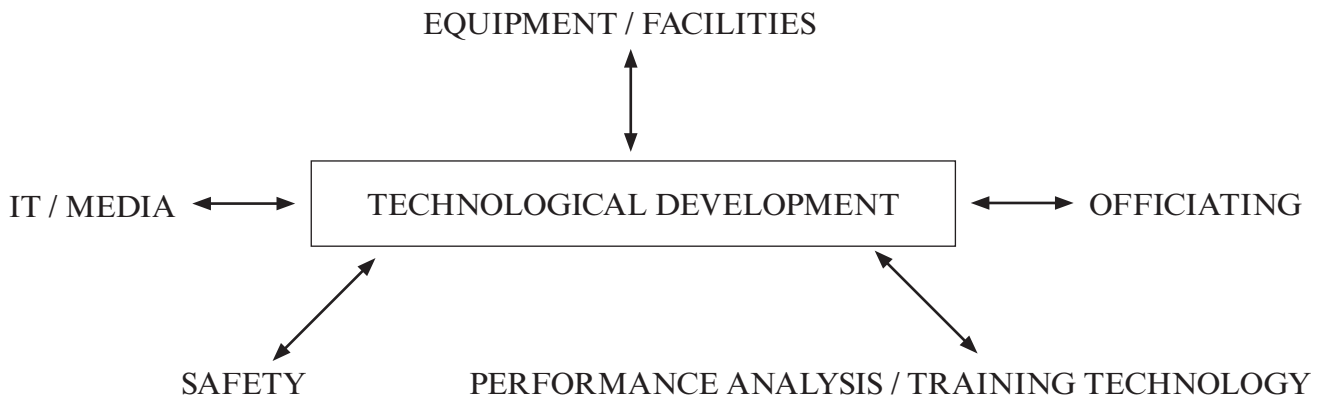
Total 4 marks



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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