

Write your name here

Surname

Other names

Centre Number

Candidate Number

**Edexcel GCSE**

# Physical Education

## Unit 1: The Theory of Physical Education

Wednesday 23 May 2012 – Afternoon

**Time: 1 hour 30 minutes**

Paper Reference

**5PE01/01**

**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 candidate 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 80.
- The marks for **each** question are shown in brackets  
– *use this as a guide as to how much time to spend on each question.*
- Questions labelled with an **asterisk** (\*) are ones where the quality of your written communication will be assessed  
– *you should take particular care on these questions with your spelling, punctuation and grammar, as well as the clarity of expression.*

### Advice

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

Turn over ►

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**PEARSON**

Answer ALL the questions.

For each part of question 1, 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 ☒.

- 1 (a) Which **one** of the following combines a physical **and** mental benefit of a healthy, active lifestyle? (1)
- A Aesthetic appreciation
  - B Cooperation
  - C Physical challenge
  - D Development of friendships and social mixing
- (b) Which **one** of the following is a socio-economic key influence that can impact on achieving sustained involvement in physical activity? (1)
- A Role models
  - B Fashion
  - C Disability
  - D Cost
- (c) Which **one** of the following would be **most** important to a rower 8 minutes into a 12-minute race? (1)
- A Muscular strength
  - B Muscular endurance
  - C Flexibility
  - D Body composition
- (d) Which **one** of the following statements is **false**? (1)
- A The components of the FITT principle are Frequency, Interval, Time, Type
  - B The FITT principle overlaps with the principle of Specificity
  - C Reversibility can result in a drop in fitness levels
  - D The principle of Individual Differences considers the needs of the individual rather than just the sport



(e) Which **one** of the following statements is **true**?

(1)

- A** There is no need to wait to exercise after eating a large meal
- B** During exercise blood is redistributed away from the muscles being used
- C** The amount of exercise, work and rest has no impact on personal health
- D** Blood shunting is the term used to describe the redistribution of blood during exercise

(f) The following are all examples of categories of performance-enhancing drugs. Which category is an endurance cyclist **most** likely to be tempted to take despite the potential health risks?

(1)

- A** Anabolic steroids
- B** Peptide hormones (Erythropoietin/EPO)
- C** Diuretics
- D** Narcotic analgesics

(g) Which **one** of the following statements correctly defines the term cardiac output?

(1)

- A** Heart rate  $\div$  stroke volume = cardiac output
- B** Cardiac output = heart rate – stroke volume
- C** Cardiac output = heart rate  $\times$  stroke volume
- D** Stroke volume  $\times$  vital capacity = cardiac output

(h) Which **one** of the following statements accurately explains an effect of smoking on the respiratory system?

(1)

- A** Cigarette smoke increases the amount of oxygen carried in the blood by haemoglobin
- B** Sprinters who smoke notice a greater effect on their performance than endurance athletes who smoke
- C** If a performer is a heavy smoker it will slow their recovery whatever their event
- D** Oxygen supply to the body is not affected by smoking



(i) Which **one** of the following statements correctly explains the term isometric? (1)

- A** An isometric muscle contraction does not result in movement
- B** A gymnast running across the floor towards the vault is using isometric muscle contractions
- C** A swimmer using her leg muscles to 'explode' from the blocks when the whistle blows uses isometric contractions
- D** An isometric muscle contraction is less strenuous than an isotonic contraction. This means the muscle can continue to work for longer.

(j) Which **one** of the following statements is correct? (1)

- A** Flexion, extension and abduction are all possible at the shoulder
- B** Tennis elbow, badminton elbow and athletes ankle are all types of joint injury
- C** Flexion, extension and abduction are all possible at the knee
- D** Compound, greenstick and brownstick are all types of fracture

**(Total for Question 1 = 10 marks)**



2 The table below states three of the responses made by GCSE PE students when asked about their healthy, active lifestyle choices.

In the table:

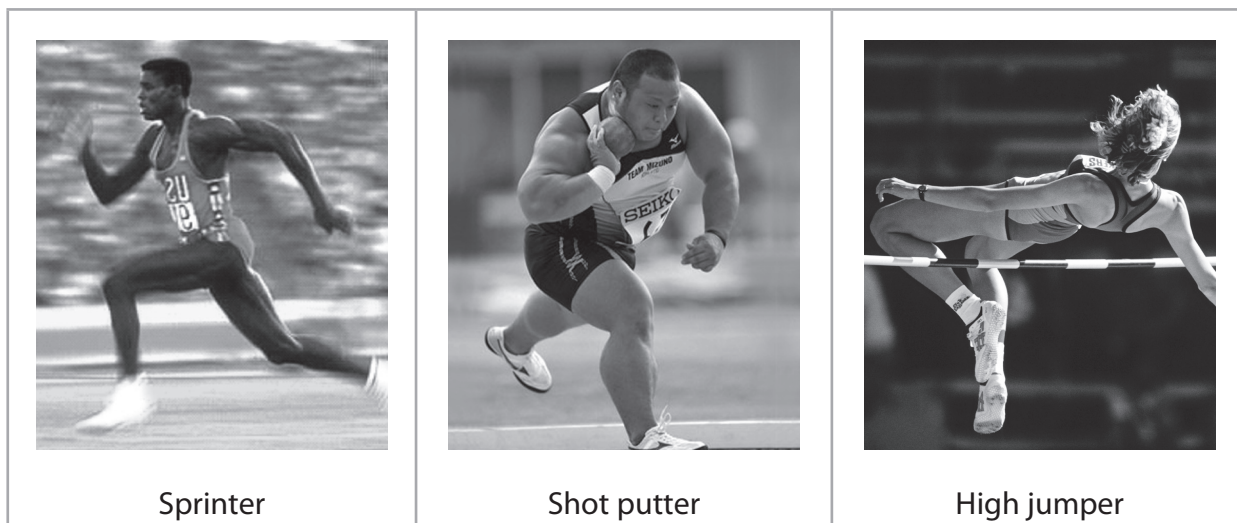
- briefly describe how each lifestyle choice could benefit an individual (3)
- classify each identified benefit as social, physical or mental. (3)

Responses made by GCSE PE students about their healthy, active lifestyle choices	Description of how each lifestyle choice could benefit an individual	Classification of each identified benefit as social, physical or mental
Previously I would get the bus to school but now I walk		
Despite the pressure of my examinations I still made sure that I had time to stop revising and play sport for a break		
I've always enjoyed running, and would often go on long runs on my own, but I joined my local athletics club and now run with other runners from the club		

(Total for Question 2 = 6 marks)



3 Identify three components of skill-related fitness that would be relevant to **all** the performers in **Figure 1**.



**Figure 1**

Component 1 .....

Component 2 .....

Component 3 .....

**(Total for Question 3 = 3 marks)**



- 4 As part of a school's focus on healthy living, Year 10 students were asked to keep a log of all the food they ate over a one-week period.

Figure 2 is an extract from a student's log.

	<b>Breakfast</b>	<b>Lunch</b>	<b>Dinner</b>	<b>Snacks</b>	<b>Drinks</b>
Monday	None	Burger and chips	Egg and chips	Chocolate bars x 2	1 litre water 1 litre coke
Tuesday	Cereal	Tuna sandwich from home	Chicken, potatoes, peas	Crisps	1 litre water

**Figure 2**

- (a) Which of the two days, Monday or Tuesday, provided a more balanced diet?

(1)

- (b) Explain the requirements of a balanced diet.

(4)

**(Total for Question 4 = 5 marks)**



5 The performers in Figure 3 have the same body type (somatotype).

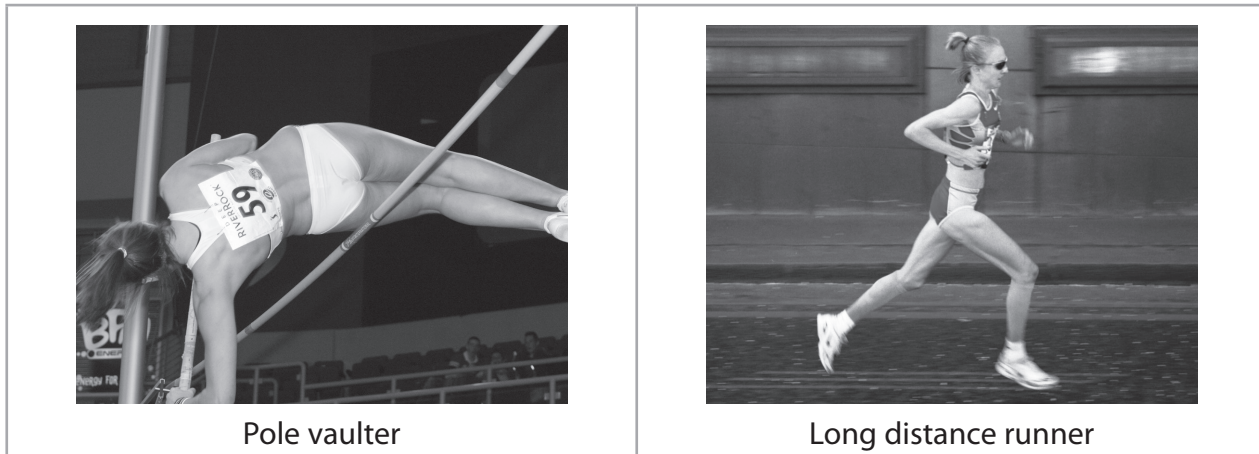


Figure 3

(a) Name the body type of the performers in **Figure 3**. (1)

.....

.....

(b) Describe a characteristic of this body type. (1)

.....

.....

(c) Give **one** advantage of this body type for:

(i) The pole vaulter (1)

.....

.....

(ii) The long distance runner. (1)

.....

.....





The performers in **Figure 3** will have a different optimum weight compared to performers in other athletic activities such as sprinting and shot put.

(d) State **two** factors that will cause optimum weight to vary between individuals competing in the **same** event.

(2)

1. ....

2. ....

**(Total for Question 5 = 6 marks)**

**6** Diet and rest need to be considered when planning a healthy, active lifestyle.

Describe the impact of diet and rest on the cardiovascular system.

(i) Impact of **diet** on the cardiovascular system.

(3)

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(ii) Impact of **rest** on the cardiovascular system.

(2)

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**(Total for Question 6 = 5 marks)**



7 The following statements are effects of participation in exercise and physical activity on the cardiovascular system. State whether the effect is immediate or long term.

**Immediate or long term effect?**

Increased heart rate .....

Increased cardiac output .....

Increased maximum cardiac output .....

**(Total for Question 7 = 3 marks)**

8 Oxygen debt can occur as a result of exercise.

(a) State whether oxygen debt occurs as a result of aerobic or anaerobic respiration. (1)

.....  
.....

(b) When is oxygen debt 'paid back'? (1)

.....  
.....

(c) Give an example of when the following performers would experience oxygen debt in their activity. (1)

(i) A runner in a 1500 metres race.

.....  
.....

(ii) A player in a game of tennis. (1)

.....  
.....

(iii) A boxer in a boxing match. (1)

.....  
.....

**(Total for Question 8 = 5 marks)**



9 Complete the statements below by identifying which muscles are contracting to allow the gymnast in Figure 4 to achieve the described actions.



**Figure 4**

(a) Keeping the arm straight at the elbow.

(1)

.....

.....

(b) Keeping the leg straight at the knee.

(1)

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.....

(c) Moving the arms away from the mid-line of the body.

(1)

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.....

(d) Pointing the toes.

(1)

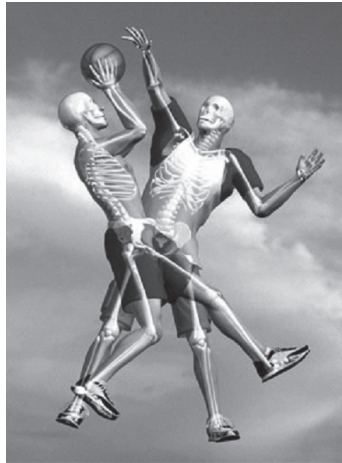
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**(Total for Question 9 = 4 marks)**



**10** The skeletal system plays an important role in allowing for a healthy, active lifestyle. Figure 5 shows the skeletal system of two basketball players.



**Figure 5**

In the table below:

- identify **three** functions of the skeletal system in use during physical activity (3)
- give **one** example of how each function is used during a game of basketball. (3)

Function of the skeletal system during physical activity	Example of use during a basketball game

**(Total for Question 10 = 6 marks)**



11 Two GCSE PE students were determined to help their parents, Janet and John, become involved in sport so that Janet and John could benefit from a healthy, active lifestyle.

(a) Other than participation, identify **three** different roles available to Janet and John for becoming involved in physical activity.

(3)

- 1. ....
- 2. ....
- 3. ....

(b) Before returning to physical activity Janet and John should complete a PAR-Q. What is the purpose of a PAR-Q?

(1)

- .....

(c) If John is new to a sport which level of the sports participation pyramid will he enter?

(1)

- .....

(d) Janet wants to increase her fitness.

(i) Explain the term "fitness".

(1)

- .....

(ii) How does fitness relate to a balanced, healthy lifestyle?

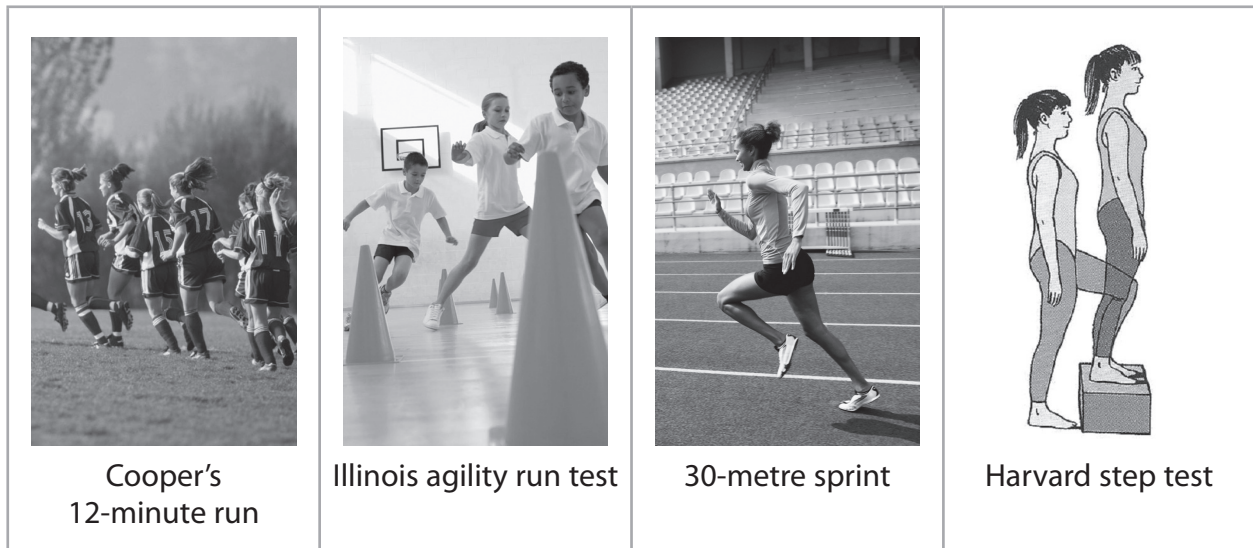
(2)

- .....
- .....
- .....



(e) Select the **two** most appropriate fitness tests, from those shown in Figure 6, to measure Janet's current level of cardiovascular fitness.

(2)



**Figure 6**

Fitness test 1. ....  
.....

Fitness test 2. ....  
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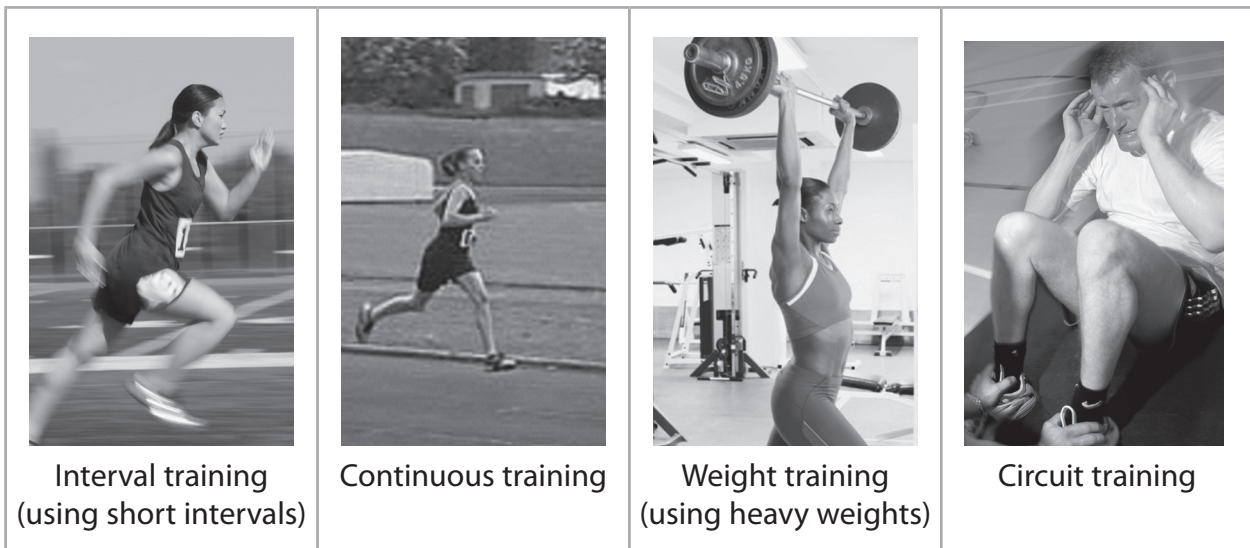
(f) Name and briefly explain the principle of training Janet should apply in order to safely improve her fitness.

(2)

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



Janet needs to select a relevant method of training to improve her cardiovascular fitness. Four different methods of training are shown in Figure 7.



**Figure 7**

(g) (i) Identify the **most** relevant and **least** relevant method of training to help Janet improve her cardiovascular fitness from Figure 7.

(2)

Most relevant	
Least relevant	

(ii) Identify a sporting activity where the performers would use the training method you identified as **least** relevant to Janet.

(1)

**(Total for Question 11 = 15 marks)**







**\*13** The ability to identify and reduce risks associated with physical activity is essential to minimise injury.

For a physical activity of your choice, explain how to reduce a variety of risks associated with that activity in order to maintain physical health.

Your named physical activity .....

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**(Total for Question 13 = 6 marks)**

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**TOTAL FOR PAPER = 80 MARKS**



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