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# Physical Education

## Unit 1: The Theory of Physical Education

Friday 15 May 2015 – 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.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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**PEARSON**

**Answer ALL questions.**

**Some questions must be answered with a cross in a box ☒. 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 is a leadership role in physical activity? (1)

- A Player
- B Manager
- C Linesman
- D Secretary

(b) Which component of fitness can be tested using the equipment shown in **Figure 1**? (1)



**Figure 1**

- A Power
- B Coordination
- C Cardiovascular fitness
- D Flexibility

(c) The FITT principle is a principle of training.  
Which part of the FITT principle overlaps with the principle of specificity? (1)

- A Type
- B Time
- C Frequency
- D Intensity



(d) When should a PAR-Q be completed?

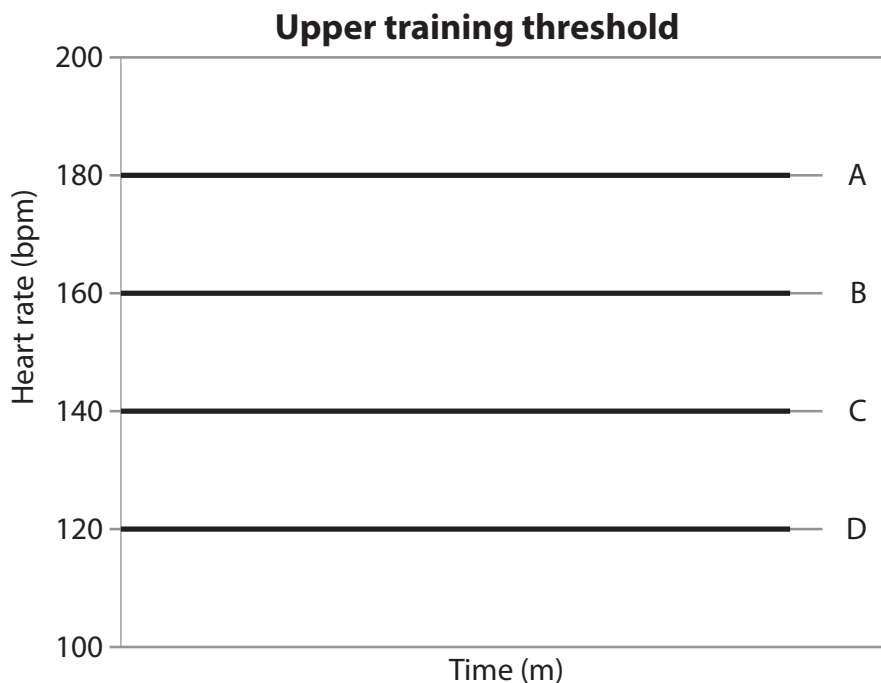
(1)

- A** At the end of an exercise session
- B** After a warm-up before beginning the main session
- C** Before planning a Personal Exercise Programme (PEP)
- D** At the end of the playing season

(e) Target zones are used to make sure training is at the correct intensity.

Which line on the graph (Figure 2) shows the **upper** training threshold for a 20 year old?

(1)



**Figure 2**

- A** Line A (90%)
- B** Line B (80%)
- C** Line C (70%)
- D** Line D (60%)



(f) Which category of performance enhancing drugs would an Olympic weightlifter take to increase the weight they can lift?

(1)

- A** Beta blockers
- B** Narcotic analgesics
- C** Stimulants
- D** Peptide hormones

(g) Which **one** of the following categories of drugs would a performer take to mask the presence of other drugs in their body?

(1)

- A** Diuretics
- B** Narcotic analgesics
- C** Stimulants
- D** Anabolic steroids

(h) Cholesterol is often measured as part of a health check.

Which **one** of the following is a correct statement about cholesterol?

(1)

- A** An increase in fat intake will only increase HDL (high density lipoprotein) levels.
- B** Regular aerobic activity has no effect on cholesterol levels.
- C** Correct diet can improve cholesterol levels.
- D** High levels of LDL (low density lipoprotein) are preferable to high levels of HDL (high density lipoprotein).

(i) Alcohol is a recreational drug.

Which **one** of the following is an effect of alcohol on the cardiovascular system?

(1)

- A** Alcohol increases oxygen debt
- B** Alcohol decreases lung volume
- C** Alcohol increases blood pressure
- D** Alcohol lowers blood pressure



- (j) Which **one** of the following describes **vital capacity**? (1)
- A** The maximum amount of air you can forcibly breathe in and out per breath.
  - B** The total amount of air you breathe in and out during normal breathing.
  - C** The maximum amount of blood ejected from your heart per minute.
  - D** The total amount of blood you need during exercise.

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

**2** Participation in physical activity can bring about many health benefits.

Serotonin levels increase when we take part in physical activity.

- (a) Briefly explain why an increase in serotonin is a health benefit. (2)

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(b) Joe has a disability and has recently started to play wheelchair rugby.

- (i) Complete the following statement. (1)

Joe has made a lot of new friends at his rugby club. This is a  
..... benefit of physical activity.

- (ii) Explain how starting to play rugby at a club could increase Joe's self-esteem. (3)

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The statements in the table below give reasons why Joe and his friends joined the rugby club.

(c) For each reason, identify the key influence.

| Reason |   | Key Influence |
|--------|---|---------------|
| (i)    | Joe started to play rugby because his friends did.                                  | (1)           |
| (ii)   | Joe's friends found out about the rugby club from an advert in the local newspaper. | (1)           |
| (iii)  | Joe started to play rugby because the club was close to his home.                   | (1)           |

**(Total for Question 2 = 9 marks)**



**3** (a) There are many different initiatives in sport that are designed to increase participation in physical activity.

Identify **one** agency that helps to provide opportunities to increase participation in physical activity.

(1)

(b) Some initiatives focus on priority groups.

Describe how an initiative to increase participation could improve the physical health of priority groups.

(3)

(c) Some initiatives are developed to increase participation by providing opportunities to become or remain involved in physical activity.

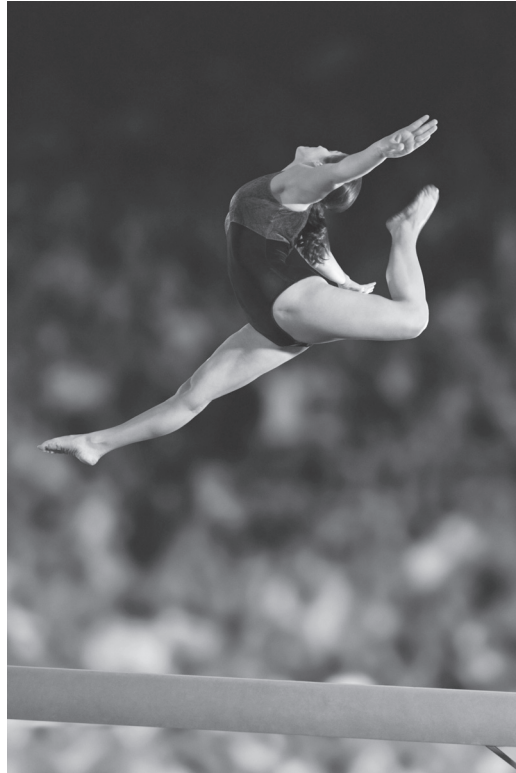
Describe another common purpose of initiatives.

(2)

**(Total for Question 3 = 6 marks)**



4 **Figure 3** shows a gymnast during her routine on the balance beam.



**Figure 3**

(a) Briefly explain how the gymnast has used power **and** coordination to achieve the position shown in **Figure 3**.

(i) Power

(2)

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(ii) Coordination

(2)

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(b) Give an example of when the gymnast shown in **Figure 3** would need a good reaction time in the routine.

(1)

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(c) Participation in physical activity involves some risk of injury.

Identify a risk associated with gymnastics **and** how to reduce this risk.

(2)

Risk

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How to reduce risk

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**(Total for Question 4 = 7 marks)**

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5 Ben and Jake are cross country runners. They both take part in a series of fitness tests.

After completing the Harvard Step Test, Ben recovers to his resting heart rate quicker than Jake.

(a) Briefly explain why a quicker recovery rate would be an advantage during a cross country race.

(2)

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(b) Which component of fitness is being tested by the Harvard Step Test?

(1)

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(c) Give **one** reason why this may be a good test to assess fitness for cross country.

(1)

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(d) Give **one** reason why this may not be a good test to assess fitness for cross country.

(1)

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



**6** Elite sports performers make sure they eat a balanced diet.

Briefly explain the importance of carbohydrates and protein to an elite sports performer.

(i) Carbohydrates

(2)

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(ii) Protein

(2)

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**(Total for Question 6 = 4 marks)**

**7** Adrianna is a basketball player. Due to a lack of time she often eats her dinner just before playing basketball.

Explain why eating a large meal just before exercise might have a negative effect on performance.

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



8 Three extreme body types are listed below.

For each of the body types, name a sporting activity where this body type would be an advantage.

You must name a **different** sporting activity for each body type.

1 Mesomorph

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2 Endomorph

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3 Ectomorph

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**(Total for Question 8 = 3 marks)**

9 Amy is warming up in preparation for a tennis match. During her warm-up Amy's heart rate and breathing rate increase.

(a) Explain why it is important that Amy's heart rate **and** breathing rate increase.

(3)

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(b) An increase in heart rate will increase cardiac output.

How else can the heart increase cardiac output?

(1)

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(c) What is the immediate effect of exercise on systolic blood pressure?

(1)

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**(Total for Question 9 = 5 marks)**



10 **Figure 4** shows a javelin thrower.



**Position A**



**Position B**

**Figure 4**

(a) Identify the joint action at the elbow as the performer in **Figure 4** moves the javelin **from** position A **to** position B. (1)

(b) Identify the type of muscle contraction as the performer's throwing arm moves **from** position A **to** position B. (1)

(c) Describe the role of the muscles in the upper arm in moving the arm **from** position A **to** position B, as shown in **Figure 4**. (3)

(d) Name a joint injury that could affect a performer's ability to throw the javelin. (1)

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



11 Our health, fitness and level of exercise can all affect our ability to lead a healthy, active lifestyle.

(a) Use an example to explain how poor physical health can affect performance in physical activity.

(3)

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(b) Tai and Aran both play hockey. Cardiovascular fitness and flexibility are two components of health-related exercise that are needed when playing hockey.

(i) Briefly explain why Tai and Aran need high levels of cardiovascular fitness **and** flexibility to perform well in their sport.

1 Cardiovascular fitness

(2)

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2 Flexibility

(2)

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(ii) Identify another component of health-related exercise that is required when playing hockey.

(1)

Tai plays for the girls' 1st team and Aran plays in the boys' 2nd team. Tai also plays for a team outside of school.

(c) State **two** reasons why Tai and Aran's school coach applies the **principle of individual differences** to their Personal Exercise Programmes (PEPs).

(2)

1 .....

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2 .....

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**(Total for Question 11 = 10 marks)**











(Total for Question 13 = 6 marks)

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**TOTAL FOR PAPER = 80 MARKS**



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