

Paper Reference(s) 1PE0/01

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Physical Education

Component 1: Fitness and Body Systems

Total Marks

Wednesday 13 May 2020 – Afternoon

Time: 1 hour 45 minutes plus your additional time allowance

In the boxes below, write your name, centre number and candidate number.

Surname					
Other names					
Centre Number					
Candidate Number					

YOU MUST HAVE

Nil

YOU WILL BE GIVEN

Diagram Booklet

INSTRUCTIONS

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 90.

The marks for EACH question are shown in brackets – use this as a guide as to how much time to spend on each question.

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.

Answer ALL questions.

Write your answers in the spaces provided.

Some questions must be answered with a cross ☐. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☐.

1 Look at FIGURE 1 for Question 1(a) in the Diagram Booklet. It is a diagram of the heart.

**(a) Which ONE of A, B, C or D in FIGURE 1 is a ventricle?
(1 mark)**

☐ A

☐ B

☐ C

☐ D

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1 continued.

Look at FIGURE 2 for Question 1(b) in the Diagram Booklet. It shows a footballer about to kick the ball.

**(b) Which ONE of the following lever systems is acting at the knee when kicking the ball?
(1 mark)**

- ☐ **A First and second class lever system**
- ☐ **B First class lever system**
- ☐ **C Second class lever system**
- ☐ **D Third class lever system**

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1 continued.

Karar takes part in the Illinois agility run test and scores 15.1 seconds.

Look at TABLE 1 for Question 1(c) in the Diagram Booklet. It shows ratings for the Illinois agility run test.

**(c) Which ONE of the following is the correct rating for Karar, given his score of 15.1 seconds?
(1 mark)**

- ☐ **A Average**
- ☐ **B Excellent**
- ☐ **C Fair**
- ☐ **D Good**

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1 continued.

(d) Which ONE of the following fitness tests measures strength?

(1 mark)

- ☐ **A 30 m sprint**
- ☐ **B Grip dynamometer**
- ☐ **C One-minute press-up**
- ☐ **D One-minute sit-up**

(e) Which ONE of the following principles of training allows the body to adapt and get fitter without risking injury?

(1 mark)

- ☐ **A Overtraining**
- ☐ **B Progressive overload**
- ☐ **C Reversibility**
- ☐ **D Specificity**

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1 continued.

(f) Which ONE of the following methods of training is being described?

‘Work at a number of stations designed to develop skill or a component of fitness’

(1 mark)

- ☐ **A Circuit training**
- ☐ **B Interval training**
- ☐ **C Plyometric training**
- ☐ **D Weight training**

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1 continued.

Look at TABLE 2 for Question 1(g) in the Diagram Booklet. It shows four students' heart rate readings during exercise.

Each student is taking part in a different type of training.

(g) Which ONE of the students in TABLE 2, A, B, C or D, is MOST likely to be doing sprint interval training?
(1 mark)

☐ **A**

☐ **B**

☐ **C**

☐ **D**

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1 continued.

**(h) Which ONE of the following fitness classes requires the use of weights?
(1 mark)**

☐ **A Body pump**

☐ **B Pilates**

☐ **C Spinning**

☐ **D Yoga**

(Total for Question 1 = 8 marks)

2 Complete the following statements.

(i) The bones of the skeleton protect

the _____ . For

example, in a football match if two players

clash heads when trying to head the ball,

the _____ protects

the _____ .

(3 marks)

(ii) The _____ are responsible

for clotting the blood.

(1 mark)

(iii) The skeleton produces _____

blood cells to help fight infection.

(1 mark)

(Total for Question 2 = 5 marks)

3 Bones form joints to allow different ranges of movement.

Look at TABLE 3 for Question 3 in the Diagram Booklet. Complete TABLE 3 by:

- (a) Stating a range of movement possible at each type of joint.
(3 marks)**
- (b) Stating an example of the type of joint in the body.
(3 marks)**

Look at FIGURE 3 for Question 3(c) in the Diagram Booklet. The wrist is made up of short bones.

- (c) Explain the importance of having short bones in the wrist for the diver in FIGURE 3.
(2 marks)**

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3 continued.

(Total for Question 3 = 8 marks)

4 We need energy to exercise.

(a) Look at TABLE 4 for Question 4(a) in the Diagram Booklet. Complete TABLE 4 by stating a different energy source for each type of exercise.

(b) Explain which type of exercise gives lactic acid as a by-product.

(2 marks)

(Total for Question 4 = 4 marks)

5 Look at FIGURE 4 for Question 5 in the Diagram Booklet. It shows the take-off in the long jump.

- (a) Explain why the lever system operating at the take-off foot in FIGURE 4 is classified as a second class lever system.
(4 marks)**

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5 continued.

- (b) Explain why the second class lever system in FIGURE 4 operates at a mechanical advantage. (2 marks)**

(Total for Question 5 = 6 marks)

- 6 Movement in the body occurs in planes and around axes.**

Look at TABLE 5 for Question 6 in the Diagram Booklet. Complete TABLE 5 by:

- (a) Stating the plane and axis for the cartwheel.
(2 marks)**
- (b) Stating the plane and axis for the piked somersault.
(2 marks)**

(Total for Question 6 = 4 marks)

7 Mohamed is a high jumper.

During the high jump the gastrocnemius and the tibialis anterior work antagonistically to allow movement at the ankle during take-off.

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- (a) Explain the importance of this antagonistic muscle action to the high jumper.
(2 marks)**

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7 continued.

Look at TABLE 6 for Question 7(b) in the Diagram Booklet. It shows Mohamed's fitness test ratings.

Complete TABLE 6 by:

- (b) Stating the component of fitness tested by each test.
(3 marks)**

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7 continued.

Analyse the data in TABLE 6 to:

- (c) Explain the MOST important component of fitness Mohamed should improve to increase his high jump performance.**

(2 marks)

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7 continued.

- (d) Explain which ONE of the fitness tests in TABLE 6 is the LEAST relevant to Mohamed's high jump performance.
(3 marks)**

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Mohamed plans a plyometric training programme.

**(e) Describe plyometric training.
(3 marks)**

7 continued.

- (f) Justify ONE reason why weight training would NOT be suitable to improve Mohamed's high jump performance.
(2 marks)**

(Total for Question 7 = 15 marks)

8 Carolyn is preparing to run a marathon.

Look at TABLE 7 for Question 8 in the Diagram Booklet. It shows data collected during one of her training sessions.

Analyse the data in TABLE 7 to:

- (a) Predict the MOST likely trend for Carolyn's time for mile 13.
(1 mark)**

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- (b) Justify, using the data in TABLE 7, why Carolyn thinks she should work on her cardiovascular fitness.
(4 marks)**

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- (c) Explain ONE training method that would be suitable for Carolyn to improve her cardiovascular fitness for marathon running.
(3 marks)**

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Regular training increases the number of alveoli in the lungs.

- (d) (i) Explain ONE reason why an increase in the number of alveoli would improve Carolyn's marathon running performance.
(2 marks)**

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8 continued.

As well as increasing the number of alveoli in the lungs, regular training causes other adaptations to the respiratory system.

- (ii) State TWO OTHER long-term training adaptations to Carolyn's respiratory system.
(2 marks)**

Training adaptation 1

Training adaptation 2

(Total for Question 8 = 12 marks)

- 9 Miss Convoy is a PE teacher. She runs an after school weight training class.**

Look at FIGURE 5 for Question 9(a) in the Diagram Booklet. It shows the weight training room.

Before the first weight training class everyone completes a PARQ.

- (a) State ONE reason why everyone is asked to fill in a PARQ.
(1 mark)**

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The weight training class starts with a warm-up and ends with a cool down.

- (b) (i) Explain why Miss Convoy makes sure that the class stretches as part of the warm-up.
(2 marks)**

9 continued.

**(ii) State ONE purpose of a cool down.
(1 mark)**

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- (c) State TWO safety checks Miss Convoy should carry out each time before teaching the weight training class.
(2 marks)**

Safety check 1

Safety check 2

(Total for Question 9 = 6 marks)

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- 10 Some athletes risk being banned from their sport by taking performance-enhancing drugs (PEDs).**

Look at TABLE 8 for Question 10 in the Diagram Booklet. Complete TABLE 8 by:

- (a) Stating a sport or physical activity where the effects of the PED would be an advantage.
(2 marks)**
- (b) Stating an advantage of the PED to a performer in that sport or physical activity.
(2 marks)**

(Total for Question 10 = 4 marks)

11 Dexter plays basketball.

A basketball game is played at different intensities. Dexter's body uses different muscle fibre types as the intensity of the play increases and decreases.

Look at FIGURE 6 for Question 11 in the Diagram Booklet. It shows three different intensities of play in basketball.

Evaluate the importance of THREE different muscle fibre types during the different intensities of play in FIGURE 6.

(9 marks)

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(Total for Question 11 = 9 marks)

- 12 Jack competes in the 110m sprint hurdles. He has to run as fast as possible, jumping hurdles as he runs.**

Look at FIGURE 7 for Question 12 in the Diagram Booklet. It shows a 110m sprint hurdles race.

Jack has high levels of power, strength and flexibility.

Evaluate THREE OTHER components of fitness that will help Jack's sprint hurdling performance.

(9 marks)

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(Total for Question 12 = 9 marks)

TOTAL FOR PAPER = 90 MARKS

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