

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Candidate Number

Pearson Edexcel Level 1/2 GCSE (9–1)

Wednesday 22 May 2024

Afternoon (Time: 1 hour 30 minutes)

Paper
reference

1PE0/01

Physical Education
COMPONENT 1: Fitness and Body Systems

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 in Sections A, B and C.
- 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.*

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.

Write your answers in the spaces provided.

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 ☒.

SECTION A

Applied anatomy and physiology and movement analysis

- 1 (a) Which **one** of the following body systems protects the vital organs? (1)

<input type="checkbox"/>	A Cardiovascular
<input type="checkbox"/>	B Muscular
<input type="checkbox"/>	C Respiratory
<input type="checkbox"/>	D Skeletal

- (b) Which **one** of the following describes when **vasoconstriction** would take place in the digestive system? (1)

<input type="checkbox"/>	A Immediately after the performer has eaten
<input type="checkbox"/>	B When the performer is active
<input type="checkbox"/>	C When the performer is at rest
<input type="checkbox"/>	D When the performer needs increased blood flow to the digestive system

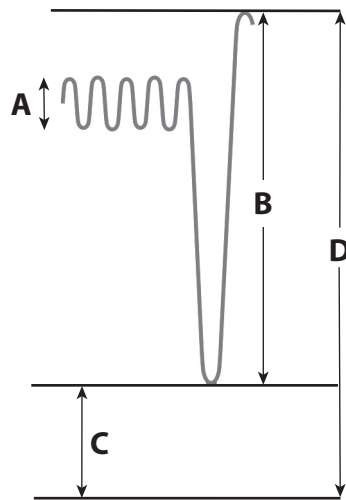
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Figure 1 shows a graph of changing lung volumes.



(Source: © AL619)

Figure 1

(c) Which letter, **A**, **B**, **C** or **D**, represents tidal volume?

(1)

<input type="checkbox"/>	A
<input type="checkbox"/>	B
<input type="checkbox"/>	C
<input type="checkbox"/>	D

(d) Which **one** of the following structures allows gas exchange with the capillaries?

(1)

<input type="checkbox"/>	A Alveoli
<input type="checkbox"/>	B Bronchi
<input type="checkbox"/>	C Bronchioles
<input type="checkbox"/>	D Diaphragm

(Total for Question 1 = 4 marks)

2 The ankle and shoulder are examples of joints in the human body.

Complete **Table 1** by:

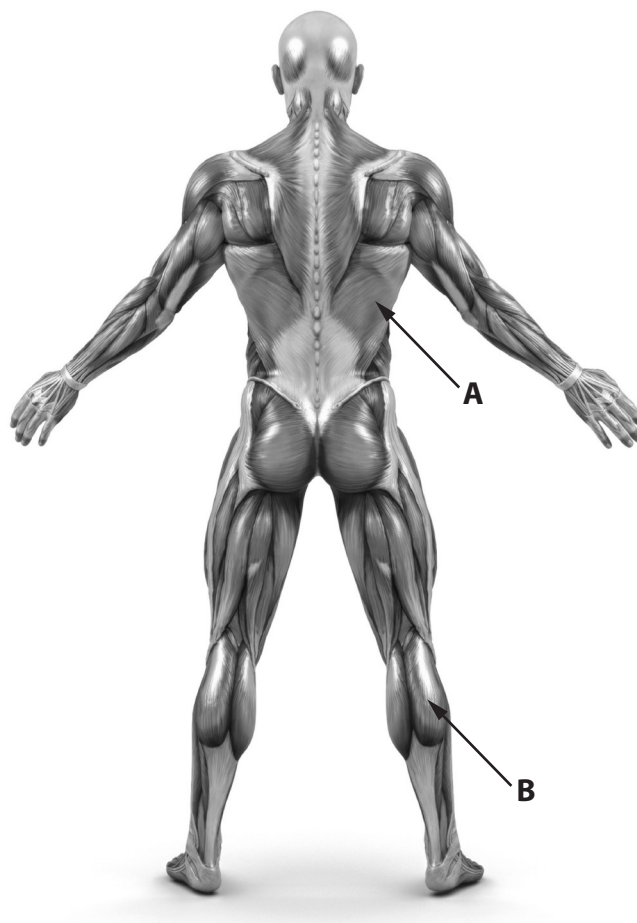
- (a) Stating the classification of each joint.
- (b) Stating **one different** range of movement for each joint.

Joint	(a) Joint classification	(b) Range of movement
Ankle	(1)	(1)
Shoulder	(1)	(1)

Table 1



3 **Figure 2** shows the muscular system.



(Source: 123RF)

Figure 2

Complete **Table 2** by:

- (a) Stating the name of the labelled muscles.
- (b) Stating the role of the labelled muscles.

Labelled muscle	(a) Name of the muscle	(b) Role of the muscle
A	(1)	(1)
B	(1)	(1)

Table 2



4 **Figure 3** shows a performer during a training session. Her left hip and left knee are circled.

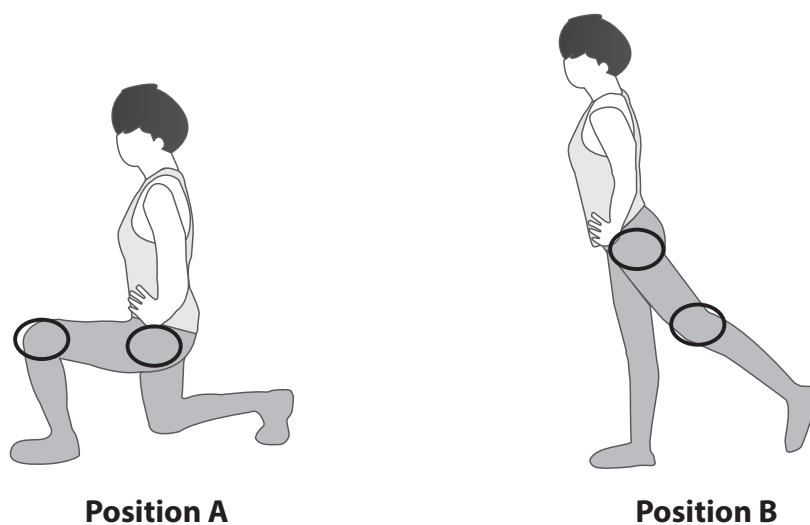


Figure 3

Analyse the actions of the antagonistic muscle pairs at the **circled** joints of the left **hip** and left **knee** that cause the movement from **Position A** to **Position B** in **Figure 3**.

(i) Left hip

(3)

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(ii) Left knee

(3)

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(Total for Question 4 = 6 marks)

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- 5 **Table 3** lists some common techniques and skills used in different sporting activities and places them into two different groups.

(i) Group 1	(ii) Group 2
Sprint start	Running for 30 minutes
Putting a shot	Swimming for 1 hour
Serving an ace in tennis	Cycling 50 miles

Table 3

- (i) State the **muscle fibre type** most beneficial to all three activities listed in **Group 1**.

(1)

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- (ii) State the **muscle fibre type** most beneficial to all three activities listed in **Group 2**.

(1)

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(Total for Question 5 = 2 marks)

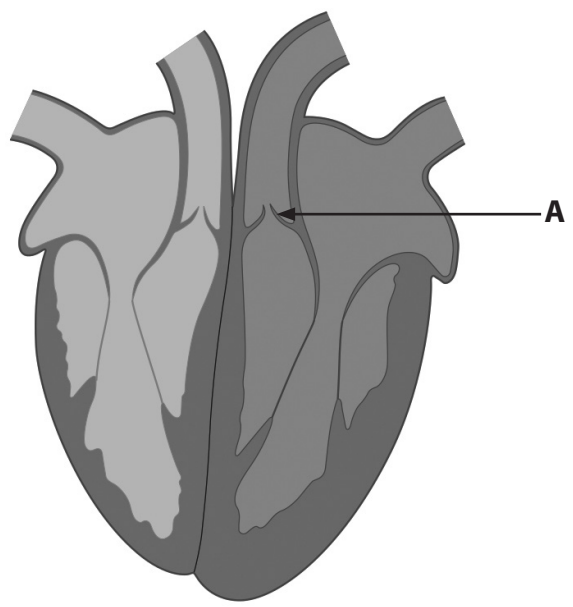


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6 **Figure 4** shows a simplified diagram of the heart.



(Source: AL1160.jpg)

Figure 4

(a) Identify the structure labelled **A** in **Figure 4**.

(1)

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(b) State the function of the structure labelled **A** in **Figure 4**.

(1)

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(Total for Question 6 = 2 marks)

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7 Two functions of the cardiovascular system are transport of nutrients and clotting of open wounds.

(a) State **one other** function of the cardiovascular system that is important to a sports performer during physical activity. (1)

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(b) Explain why the clotting of open wounds is an important function if a person is injured during physical activity. (2)

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(Total for Question 7 = 3 marks)



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8 **Figure 5** shows a sketch of a lever system.

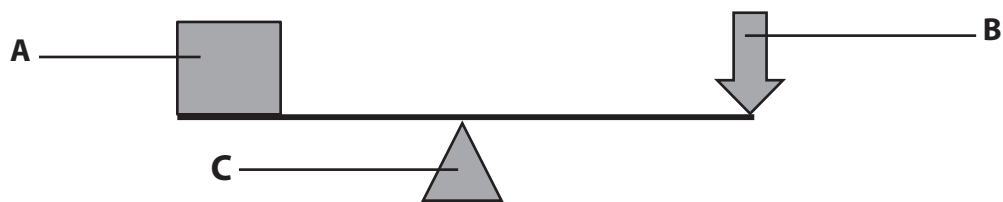


Figure 5

(a) Identify the components of the lever system, **A**, **B** and **C**, in **Figure 5**.

(i) **A**

(1)

(ii) **B**

(1)

(iii) **C**

(1)

Figure 6 shows a trampolinist mid routine.



(Source: © John Lamb/GettyImages)

Figure 6



To get the required height, the trampolinist pushes down on the trampoline each time she lands.

- (b) State the name of the **lever system** acting at the **ankle** when the trampolinist pushes off the trampoline. (1)

The lever system used to push off the trampoline provides a mechanical advantage.

- (c) Explain the **mechanical advantage** for the performer as she pushes off the trampoline. (2)

The trampolinist performs a piked front somersault as part of her routine.

- (d) Identify the plane and axis when performing a piked front somersault.
 - (i) Plane (1)
 - (ii) Axis (1)

(Total for Question 8 = 8 marks)

TOTAL FOR SECTION A = 40 MARKS



Write your answers in the spaces provided.

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 ☒.

SECTION B

Physical Training

9 Table 4 shows part of an athlete's training programme.

Week	Main activity
1	Train for 60 minutes, 3 times a week Resistance exercises using body weight.
2	Train for 60 minutes, 4 times a week Resistance exercises using body weight.
6	Train for 70 minutes, 4 times a week Resistance exercises using body weight.

Table 4

(a) Which **one** of the following principles of training is the athlete applying to their training?

(1)

<input type="checkbox"/>	A Individual needs
<input type="checkbox"/>	B Progressive overload
<input type="checkbox"/>	C Reversibility
<input type="checkbox"/>	D Thresholds of training

(b) Which **one** of the following indicates the application of the FITT principle **intensity**?

(1)

<input type="checkbox"/>	A Complete a long-distance run
<input type="checkbox"/>	B Train 3 times each week
<input type="checkbox"/>	C Train for 60 minutes
<input type="checkbox"/>	D Use body weight as resistance



Figure 7 shows a performer during an exercise session.



(Source: AL1209936.jpg)

(c) Which **one** of the following training methods is being used by the performer in Figure 7?

(1)

<input type="checkbox"/>	A Aerobics
<input type="checkbox"/>	B Fartlek
<input type="checkbox"/>	C Pilates
<input type="checkbox"/>	D Resistance

Table 5 shows ratings for the sit and reach test for adults.

Sex	Excellent	Very good	Average	Fair
Male	>27	17 – 26	6 – 16	0 – 5
Female	>30	21 – 29	11 – 20	4 – 10

(Source: adapted from <https://www.topendsports.com/testing/norms/sit-and-reach.htm>)

Table 5

(d) Which **one** of the following is the correct rating for a male, who scored 12 in the sit and reach test?

(1)

<input type="checkbox"/>	A Excellent
<input type="checkbox"/>	B Very good
<input type="checkbox"/>	C Average
<input type="checkbox"/>	D Fair

(Total for Question 9 = 4 marks)



10 Carlton is an endurance athlete. Carlton’s training leads to a drop in his resting heart rate and an increase in the strength of his diaphragm.

Explain why these long-term training effects are an advantage for an endurance athlete.

(i) Drop in resting heart rate

(2)

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(ii) Increase in strength of diaphragm

(2)

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(Total for Question 10 = 4 marks)



11 George is returning to badminton training after recovering from a long illness.

Figure 8 shows a relationship between performance, health, exercise and fitness.

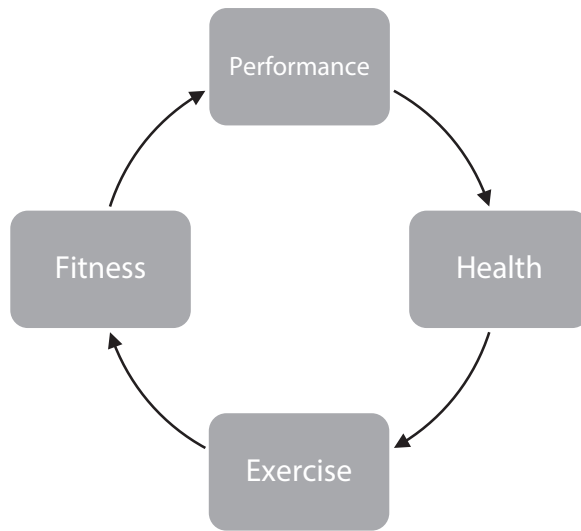


Figure 8

(a) Justify, using **Figure 8**, why George’s badminton performance will be lower after his long break from playing.

(3)

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(b) Explain **one** reason why George retests his fitness **before** he starts training again after his illness.

(2)

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Table 6 shows two fitness tests George carries out.

Fitness test
Cooper 12-minute run
Cooper 12-minute swim

Table 6

(c) (i) State **one other** fitness test George could use to test his **cardiovascular fitness**.

(1)

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(ii) Explain which **one** of the fitness tests in **Table 6** is **less** appropriate to measure George's badminton fitness.

(3)

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(d) Describe the test protocol for the Cooper 12-minute run.

(3)

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(Total for Question 11 = 12 marks)

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12 A basketball coach carries out some fitness tests.

Complete **Table 7** by:

- (a) Stating the name of the component of fitness being tested.
- (b) Stating how the component of fitness is used in basketball.

Fitness test	(a) Component of fitness	(b) How component of fitness is used in basketball
Grip dynamometer	(1)	(1)
One-minute press-up	(1)	(1)

Table 7



(c) **Table 8** shows the ratings of four basketball players' fitness tests.

Fitness test	Player 1	Player 2	Player 3	Player 4
Sit and reach	Excellent	Average	Excellent	Poor
30 m sprint	Average	Good	Very good	Excellent
Vertical jump	Average	Excellent	Very good	Very good
One-minute sit-up	Excellent	Poor	Very good	Average

Table 8

(i) State which player in **Table 8** has the highest rating for power.

(1)

(ii) Justify, using the ratings in **Table 8**, why the coach would select Player 3 for the basketball team.

(2)

(Total for Question 12 = 7 marks)

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13 Some athletes take performance-enhancing drugs (PEDs) to increase their performance.

Explain **one advantage** and **one disadvantage** of growth hormones (GH) for a **100 m sprinter** competing in a major competition.

(i) Advantage

(2)

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(ii) Disadvantage

(2)

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(Total for Question 13 = 4 marks)

TOTAL FOR SECTION B = 31 MARKS



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(Total for Question 14 = 9 marks)

TOTAL FOR SECTION C = 9 MARKS
TOTAL FOR PAPER = 80 MARKS



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