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 17 May 2023

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 is an example of a pivot joint?

(1)

☒	**A** Hip
☒	**B** Knee
☒	**C** Neck (atlas and axis)
☒	**D** Shoulder

(b) Which **one** of the following is the role of a ligament?

(1)

☒	**A** To join blood vessel to blood vessel
☒	**B** To join bone to bone
☒	**C** To join bone to muscle
☒	**D** To join muscle to muscle

(c) Which **one** of the following is an example of an **involuntary** muscle?

(1)

☒	**A** The biceps
☒	**B** The hip flexors
☒	**C** The muscular wall of an artery or vein
☒	**D** The outer layer surrounding the lungs

Figure 1 shows a gymnast performing a tucked somersault.

(Source: TYEWI118807 Image © Peter Muller/Getty Images)

Figure 1

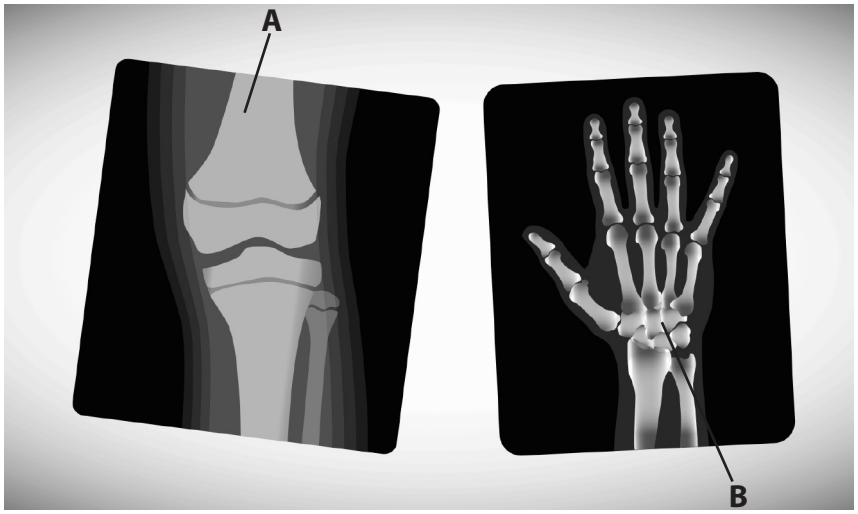
(d) Which **one** of the following is the correct plane and axis for the movement in **Figure 1**?

(1)

☒	**A** Frontal plane about the sagittal axis
☒	**B** Sagittal plane about the frontal axis
☒	**C** Transverse plane about the sagittal axis
☒	**D** Transverse plane about the vertical axis

(Total for Question 1 = 4 marks)

2 **Figure 2** shows the bones of the knee and hand.



Knee Hand

(Source: © PAL AL1327536)

Figure 2

Complete **Table 1** by:

(a) Identifying the bones labelled **A** and **B** in **Figure 2**.

(b) Stating a **different function** of each bone type.

(c) Giving an example of the use of each bone's function in sport or physical activity.

Label	(a) Identification of bones	(b) Function of each bone type	(c) Example of use
A	**(1)**	**(1)**	**(1)**
B	**(1)**	**(1)**	**(1)**

Table 1

(Total for Question 2 = 6 marks)

3 Complete the following statements about the classification of bones.

(i) The ribs are examples of ..... bones. The ribs provide protection for the ..... . For example, in boxing they will protect the boxer if .....

.....

..... .

(3)

(ii) The bones of the vertebra are called ..... bones.

One function of this type of bone is .....

.....

..... .

(2)

(Total for Question 3 = 5 marks)

4 **Figure 3** shows a gymnast.

(Source: TYEWI118862 Image © PAL)

Figure 3

Analyse the action of the antagonistic muscle pairs at the **elbow** and **ankle** that result in the gymnast achieving the shape in **Figure 3**.

(i) Elbow

(3)

(ii) Ankle

(3)

(Total for Question 4 = 6 marks)

5 Muscles fibre types have different characteristics. Each fibre type is suited to the requirements of different sporting activities.

Complete **Table 2** by:

(a) Identifying each muscle fibre type from its characteristic or example of its use.

(b) Stating a **relevant** characteristic of the fibre type in **Row A**.

(c) Giving an example of when the fibre type in **Row B** would be used in sport or physical activity.

	(a) Fibre type	**(b) Characteristic**	**(c) Example of use**
Row A	**(1)**	**(1)**	Take off in high jump
Row B	**(1)**	Most resistant to fatigue	**(1)**

Table 2

(Total for Question 5 = 4 marks)

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6 Amari takes part in long-distance events.

Explain the importance of white blood cells and blood plasma when training for a long-distance event.

(i) White blood cells

(3)

(ii) Blood plasma

(3)

(Total for Question 6 = 6 marks)

7 **Figure 4** is an incomplete diagram of a lever system.

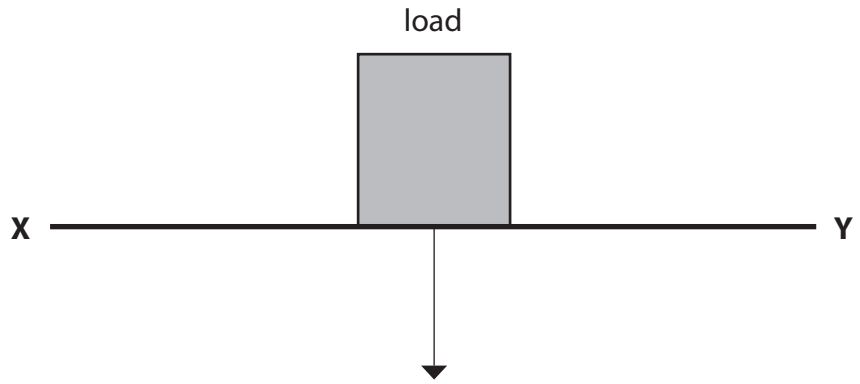

Figure 4

(a) (i) Identify the lever system shown in **Figure 4**.

(1)

.....

(ii) Identify the **two** missing parts of the lever system, labelled **X** and **Y**, in **Figure 4**.

(2)

X .....

Y .....

(b) Explain why the lever system in **Figure 4** gives a **mechanical advantage** to a performer.

(2)

.....

.....

.....

.....

.....

(c) Give **one** example of the use of the type of lever system shown in **Figure 4** in sport or physical activity.

(1)

.....

.....

(Total for Question 7 = 6 marks)

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8 **Figure 5** shows two football players completing different skills during a game.

Throw-in

Credit – AL1330208

Penalty kick

Credit – AL1271906

Figure 5

(a) Complete the following statements about the lever systems.

(i) The lever system operating at the footballer's **elbow** as the player throws the ball on to the pitch is an example of a ..... class lever system.

(1)

(ii) The lever system operating at the footballer's **knee** as the player kicks the ball at the goal is an example of a ..... class lever system.

(1)

(b) Identify the **load** in the lever system in **Figure 5** during the **throw-in**.

(1)

.....

.....

(Total for Question 8 = 3 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 **Figure 6** shows the heart rate of a runner during a training session.

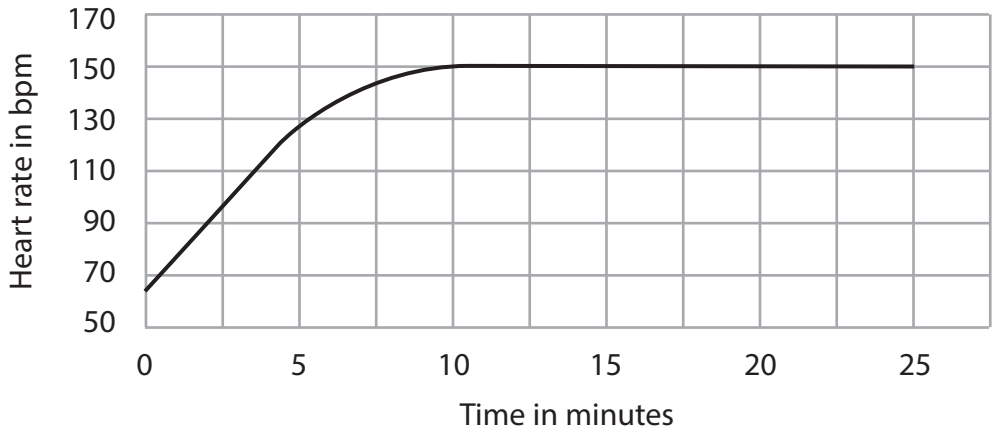

Figure 6

(a) Which **one** of the following training methods is the runner **most likely** to be using in the training session?

(1)

☒	**A** Continuous
☒	**B** Fartlek
☒	**C** Interval
☒	**D** Plyometrics

(b) Which **one** of the following training methods can be used to increase strength **and** muscular endurance?

(1)

☒	**A** Fartlek
☒	**B** Interval
☒	**C** Plyometrics
☒	**D** Weight

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(c) Which **one** of the following is a long-term training effect on the **respiratory** system?

(1)

☒	**A** Drop in resting blood pressure
☒	**B** Increased maximum cardiac output
☒	**C** Increased resting stroke volume
☒	**D** Increased vital capacity

(d) Which **one** of the following principles of training can result from poor planning?

(1)

☒	**A** FITT
☒	**B** Overtraining
☒	**C** Progressive overload
☒	**D** Thresholds of training

(Total for Question 9 = 4 marks)

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10 Carron is training to take part in a long-distance cycle race.

Table 3 shows data collected during one of Carron's training sessions.

Part of session	Distance cycled (kilometres)	Time taken to complete (minutes)	Terrain
Part 1	10	20	Flat
Part 2	10	30	Hilly
Part 3	10	20	Flat

Table 3

(a) Justify, using the data in **Table 3**, why part 2 of the training session was the most demanding for Carron.

(3)

(b) Carron's training causes adaptations to her muscular-skeletal system.

(i) State **one** long-term training effect on Carron's **muscular** system.

(1)

(ii) State **one** long-term training effect on Carron's **skeletal** system.

(1)

Carron needs high levels of muscular endurance to complete her long-distance cycle race. She carries out the one-minute sit-up test to measure her muscular endurance.

(c) Explain whether the one-minute sit-up test is an appropriate fitness test to measure Carron's muscular endurance.

(2)

(Total for Question 10 = 7 marks)

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11 Mark wants to increase his fitness.

(a) Explain **one** reason why Mark should measure his fitness **before** designing a personal exercise programme (PEP).

(2)

Mark uses the grip dynamometer test to measure his strength.

(b) Describe how to complete the grip dynamometer test.

(2)

Table 4 shows ratings for the grip dynamometer test.

Sex	Excellent	Good	Average	Fair
Male	>56	51–56	45–50	39–44

Table 4

(Source https://www.brianmac.co.uk/grip.htm)

(c) State Mark's rating if he scores 48 on the grip dynamometer test.

(1)

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Mark carries out some more fitness tests.

Complete **Table 5** by:

(d) Stating the component of fitness Mark is testing.

(e) Stating a method of training or fitness class Mark should use to improve the component of fitness being tested.

Fitness test	(d) Component of fitness tested	(e) Method of training or fitness class to improve tested component of fitness
Sit and reach	(1)	(1)
Harvard step test	(1)	(1)

Table 5

(f) Explain why the fitness class **body pump** would be a good choice to increase Mark's strength.

(2)

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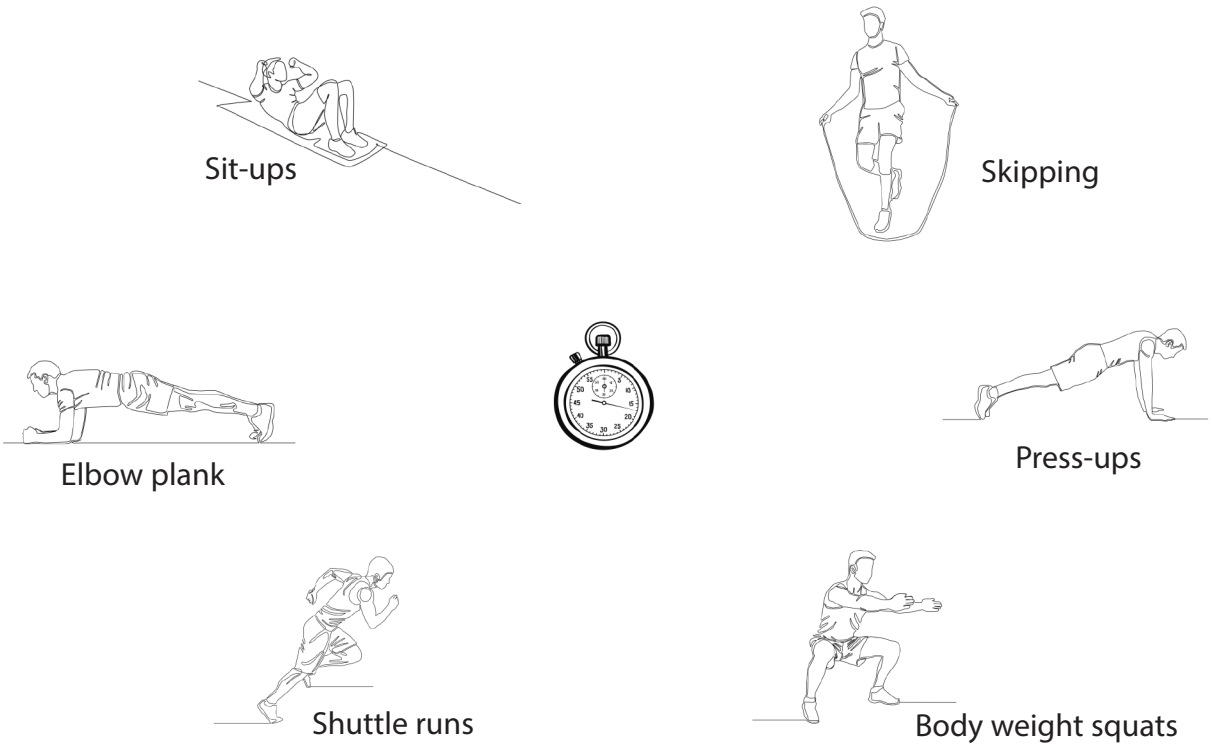
Mark joins a circuit training class to increase his fitness.

Figure 7 shows the circuit.



(Source: Image ID's Shutterstock:
Sit-ups: 1662971440; Skipping: 1827211172; Press-ups: 1825050095;
Body weight squats: 1818633245 Shuttle runs: 1816498478;
Elbow plank: 1821029399; Stopwatch:117591715)

Figure 7

(g) (i) State, using an example, how Mark could apply **progressive overload** to the sit-up station.

(2)

(ii) State, using an example, how Mark could apply **specificity** to the circuit if his aim is to increase strength.

(2)

(Total for Question 11 = 15 marks)

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12 Jacob strains a muscle during a cross-country run. His teacher suggests Jacob treats the injury using RICE.

(a) State the meaning of the first-aid term RICE.

(1)

.....

.....

(b) Give **one** example of an activity that Jacob could complete as part of his warm-up to reduce the risk of a muscle strain.

(1)

.....

.....

.....

Some elite athletes take performance-enhancing drugs (PEDs) so they can continue to train and perform when injured.

(c) Explain **one** type of performance-enhancing drug (PED) an injured sports performer may take before competition to allow them to perform.

(2)

.....

.....

.....

.....

.....

.....

.....

(d) State the type of performance-enhancing drug (PED) that masks the presence of other drugs.

(1)

.....

(Total for Question 12 = 5 marks)

TOTAL FOR SECTION B = 31 MARKS

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SECTION C

Extended writing question

13 Tom's football team is playing in the regional finals in three weeks. It is important that the team continues to play and train but remains injury free.

Evaluate **three different ways**, apart from warming up, the team can reduce the risk of injury so the team can play in the final.

(9)

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(Total for Question 13 = 9 marks)

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

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