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June 2022

GCSE Physical Education 1PE0 01

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Introduction

The level of difficulty of the paper was in line with previous series', although on this occasion advance information was supplied to centres. As previously, candidates and centres showed good preparation, with the full range of marks being achieved across all questions.

The paper begins with some multiple-choice questions; these are designed to be accessible for candidates. The main section of the paper is devoted to one, two, three or four-mark part questions (the question total might be greater than this, but the allocation of marks within the question will have been broken down into parts, eg part (a), (b) and so on).

The final section of the paper comprises two extended response questions.

To access all available marks on 1PE0 01, candidates need to recall knowledge, and demonstrate understanding of this knowledge through its application to a range of question scenarios. They will need to demonstrate understanding and higher-order skills of analysis and evaluation in the two, three, four and nine-mark questions.

It was pleasing to see the continued increase in the number of candidates providing well-structured, well-organised responses, even to the most challenging questions. Many candidates developed their ideas, following a point through in greater depth for 'explain' questions, rather than only providing a more generalised approach to their responses. Some candidates even correctly identified the Assessment Objectives (AOs) they were addressing within the extended response question, although clearly this is not a requirement.

Question 2 (a)(b)

Candidates were asked to identify two muscles from their location on an image of the muscular system and state their function. The muscles were the deltoids and external obliques.

When stating the function of each muscle it was important that correct terminology was used and linked to the shoulder, in the case of the deltoids, or the torso/spine/vertebrae, in relation to the external obliques.

Try to use all of the information given. Not only are the muscles labelled, but the location is also given in the table to ensure that candidates are thinking of the muscle at that location.

Complete **Table 2** by:

(a) Stating the name of the labelled muscles.

(b) Stating the function of the labelled muscles.

Labelled muscle	(a) Name of the muscle	(b) Function of the muscle
A (pointing to the shoulder)	Deltoid (1)	rotation at the ~~Sheard~~ Shoulder (1)
B (pointing to the side of the trunk)	Obliques (1)	rotation at the ~~hip~~ lower ~~to~~ vertabrae (1)

ResultsPlus
Examiner Comments

This response gains full marks for identifying the deltoid at A, the obliques at B and their corresponding functions.

Total: 4 Marks

ResultsPlus
Examiner Tip

Use the information provided.

Complete **Table 2** by:

(a) Stating the name of the labelled muscles.

(b) Stating the function of the labelled muscles.

Labelled muscle	(a) Name of the muscle	(b) Function of the muscle
A (pointing to the shoulder)	deltoid (1)	movement at shoulder (1)
B (pointing to the side of the trunk)	~~abdominals~~ ~~abs~~ Obliques (1)	Protection ~~of internal organs~~ and ribs and organs (1)

ResultsPlus
Examiner Comments

This response identifies both muscles correctly.

No mark is given for movement at the shoulder: the type of movement was also required.

No mark is given for protection of the rib cage: the muscle movement function was required.

Total: 2 Marks

Question 2 (c)

Candidates were asked to state one reason why skeletal muscles are classified as voluntary muscles.

Responses focussing on conscious control, or indication of this, gained the mark.

The mark was not awarded if reference was only made to the brain because this is involved in voluntary and involuntary muscle action.

(c) State **one** reason why skeletal muscles are classified as **voluntary** muscles.

(1)

Skeletal muscles are classified as a voluntary muscle because the need to be controlled by yourself for them to work/flex

ResultsPlus Examiner Comments

This response receives a mark for indicating that voluntary muscles are controlled by you, that you need to make them work.

Total: 1 Mark

(c) State **one** reason why skeletal muscles are classified as **voluntary** muscles.

(1)

They move when our ~~body~~ brain tells them to.

ResultsPlus Examiner Comments

No mark was awarded for linking to the brain because this would be relevant to all muscle classifications.

0 Marks

Question 2 (d)

This part of the question asked candidates to explain, using an example, why involuntary muscles are important during sport and physical activity.

To gain all three marks, candidates needed to:

- state that involuntary muscles were not consciously controlled
- give an example
- give the advantage of this not being consciously controlled

Many candidates provided a relevant example, often citing the muscles in the blood vessels and provided a relevant expansion, eg that this allowed redistribution of blood flow, and thus gained two of the available marks.

Alternatively those responses focussing on the value in terms of allowing the player to focus on tactics/not having to worry about controlling body functions, also gained credit.

(d) Explain, using an example, why **involuntary** muscles are important during sport and physical activity.

(3)

Involuntary muscles are muscles not controlled by the person and they include muscle tissue that ~~surroun~~ forms blood vessels such as Arteries. ~~At~~ ~~The~~ Arteries transport oxygenated blood from the heart to the working muscles and the involuntary muscle means that the blood can be pumped at high pressures. This is important in sport and physical activity because muscles require ~~oxygen so that they~~ a good supply of blood and therefore oxygen to expire aerobically and produce energy for movement.

ResultsPlus
Examiner Comments

This response gains full marks for:

- involuntary muscles not controlled by the person
- example within blood vessels
- the associated importance of oxygen transport

Total: 3 Marks

(d) Explain, using an example, why **involuntary** muscles are important during sport and physical activity.

(3)

Involuntary muscles are so important as they allow for the internal functions of the body to work whilst participating in sport. For example, a performer's cardiac muscle must be effective whilst running as without it, blood would not be passed through the cardio-respiratory system. By the use of involuntary muscles, the performer can work harder, for longer.

ResultsPlus
Examiner Comments

This response gains marks for:

- the general importance of involuntary muscles in allowing us to maintain our body functions
- the specific example

To gain the third mark there needed to be a clearer link to the question context, eg by referencing increased blood flow.

Question 3 (a)(i)

This part of the question asked candidates to identify agility from the given description.

Question 3 (a)(ii)

Having identified agility in part (i) candidates were then asked to identify a fitness test that is used to measure agility.

Whilst candidates appreciated this was a test of agility, some identified the test as the 'agility test' which was too vague for the mark. The required response was the title of the fitness test in the specification.

(ii) State the name of the fitness test that measures how quickly you can change direction.

(1)

The Illinois agility run. ~~test~~

ResultsPlus
Examiner Comments

This response gained the mark for the correct identification of the Illinois agility run.

Total: 1 Mark

(ii) State the name of the fitness test that measures how quickly you can change direction.

(1)

The agility run

ResultsPlus
Examiner Comments

This response is too vague to gain the mark: the name of the test from the specification is required, eg the Illinois agility run test.

ResultsPlus
Examiner Tip

When asked to name something, make sure you use the name from the specification.

Question 3 (b)

Candidates were asked to explain why the role of ligaments is important to games players.

In order to gain both marks, the role needed to be stated, and then why this was important.

Many candidates identified the role and importance correctly. Some incorrectly gave the role as joining muscle to bone, ie confusing the role of ligaments with tendons.

(b) Explain why the role of ligaments is important to games players.

(2)

Ligaments connect bone to bone. This connective tissue (Ligaments) prevents dislocation of bones, or bones moving out of their place. they are important to avoid constant injury for games players.

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Examiner Comments

This response gains both marks, for:

- the role of ligaments connecting bone to bone
- ligaments preventing dislocation/injury

ResultsPlus
Examiner Tip

In 'explain' questions, make sure you develop your first point and link to the question context.

(b) Explain why the role of ligaments is important to games players.

(2)

Ligaments join bone to bone, allowing movement to occur at the joints so without ligament or torn ligaments you would be unable to compete in games as there would be no movement

ResultsPlus
Examiner Comments

This response gains one mark for the role of ligaments joining bone to bone.

The second mark is not awarded because the explanation regarding movement was too vague.

There needed to be a clearer link to the question scenario, eg reducing the risk of dislocation or injury during play, or allowing them quickly to change direction, to avoid another player.

Question 3 (c)

One of the functions of the cardiovascular system is to help regulate body temperature.

(c) Explain why the cardiovascular system needs to regulate a games player's body temperature when they play sport.

(4)

The body needs to maintain an internal body temperature of ~~the~~ 37°C to make sure their organs function properly. Games players ~~&~~ run around a lot and can play in very hot weathers or very cold weather. A footballer ~~is~~ playing in midfield is constantly running around and there for gets hot. In order to maun tain a constant temperature, the performer will sweat ~~a~~ to be able to ~~evapo~~ evaporate the heat ~~off~~ their body. The blood vessels will also vaso dialate in order to allow them to get the blood closer to the skin and therefore let the heat out through radiation. If their body fails to do this, they can get too hot and then faint or their organs start to fail causing them to not play the rest of the football ~~mat~~ match.

ResultsPlus
Examiner Comments

This response gains full marks, for:

- needing to maintain body temperature at $37^{O}C$
- the explanation that engaging in physical activity will cause an increase in temperature, therefore to maintain a constant temperature heat will need to be lost
- this being achieved through vasodilation of blood vessels allowing heat loss from the skin through radiation
- the impact of not cooling the body, eg the player could faint, causing them to stop playing

This is a well-structured response demonstrating a very logical progression through the explanation.

Total: 4 Marks

ResultsPlus
Examiner Tip

Use the number of marks available as a guide to the number of points you need to make as you develop your answer.

One of the functions of the cardiovascular system is to help regulate body temperature.

(c) Explain why the cardiovascular system needs to regulate a games player's body temperature when they play sport.

(4)

So they dont overheat. It also needs to do this so they can clearly think and be quicker at reacting. Another function of the cardiovascular system regulating body temp is too allow them to keep paying the sport without Problems.

ResultsPlus
Examiner Comments

This response gains 2 marks, for:

- appreciation that without appropriate regulation the body would overheat
- the subsequent issue with this, eg that the player's reactions would become slower, and they would not be able to think as clearly

No reference was made to the cardiovascular system in terms of how temperature could be regulated.

Total: 2 Marks

Question 3 (d)(i)

This part of the question asked candidates to provide an example of when a games player would be working aerobically.

It is important when providing examples that these are clear. It is insufficient simply to state a game or a generic point in a game, eg rugby or when running in rugby.

A popular correct response for working aerobically was jogging back to position.

(d) Games players work aerobically and anaerobically during a game.

(i) Give **one** example of a games player working **aerobically** in their sport.

(1)

When jogging back to their position during a match

ResultsPlus
Examiner Comments

This response gains a mark for the example of jogging back into position: the intensity of the action is clear and is in an appropriate context.

Total: 1 Mark

ResultsPlus
Examiner Tip

Read the question carefully. This question required a specific type of example, not just from any sport.

(d) Games players work aerobically and anaerobically during a game.

(i) Give **one** example of a games player working **aerobically** in their sport.

(1)

Football because it is an on going Sport

ResultsPlus
Examiner Comments

This response gains no marks.

Identifying the sport is too vague to demonstrate the required application of the term.

Total: 0 Marks

(d) Games players work aerobically and anaerobically during a game.

(i) Give **one** example of a games player working **aerobically** in their sport.

(1)

running at a constant pace to return back to position

ResultsPlus
Examiner Comments

This response also gains no marks.

There is sufficient context, 'return back to position' but the intensity is unclear, given the context.

Total: 0 Marks

Question 3 (d)(ii)

This part of the question asked candidates to provide an example of when a games player would be working anaerobically.

There was some confusion amongst some candidates about the difference between the terms aerobic and anaerobic, whilst others clearly understood the examples were sometimes linked to other sports, eg a 100m sprinter.

Examples of working anaerobically were more varied than the examples for working aerobically, no doubt due to the nature of games play, eg lifting during a line out, sprinting to catch a defender, taking a penalty or diving to save a penalty shot.

(ii) Give **one** example of a games player working **anaerobically** in their sport.

(1)

a winger sprinting down the wing in football

ResultsPlus
Examiner Comments

This response gains the mark for identifying the intensity of work and placing in a games context.

Total: 1 Mark

(ii) Give **one** example of a games player working **anaerobically** in their sport.

(1)

Weight lifter ~~bfa~~ lifting a large amount of weight

ResultsPlus
Examiner Comments

This response gains no marks because it is not linked to the question context of a games player.

Total: 0 Marks

Question 3 (e)

The final part of Q3 asked candidates to state one of the by-products of aerobic energy production. Acceptable responses were carbon dioxide, water and heat.

Popular incorrect responses focussed on lactate accumulation or oxygen.

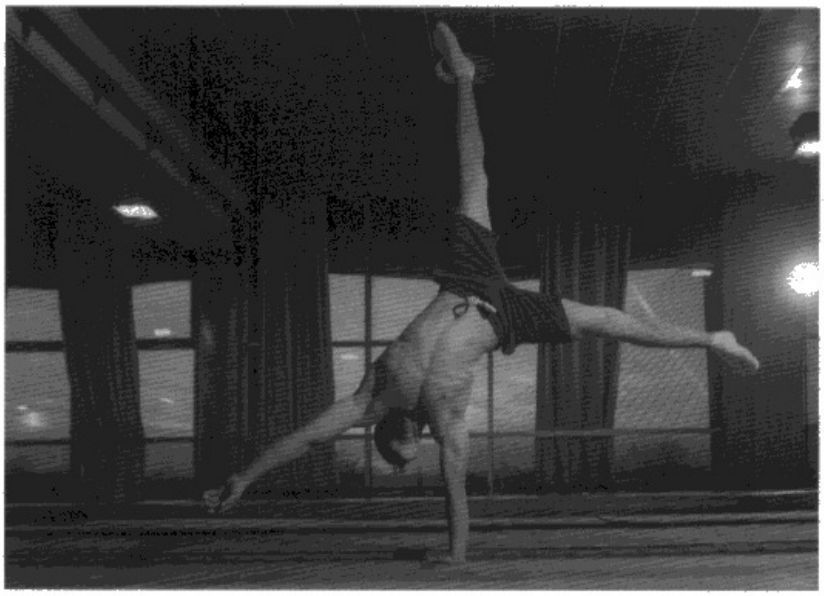
Question 4 (a)

Candidates had to state the plane and axis in use during a cartwheel.

A photograph of someone performing a cartwheel was supplied to assist candidates.

Occasionally, candidates placed the terms in the wrong order, ie sagittal plane, frontal axis, or repeated the same term for both options.

4 **Figure 5** shows a gymnast during their performance of a cartwheel.



(Source: © PAL)

Figure 5

(a) State the plane and axis used in **Figure 5** to perform this movement.

(2)

Plane

Frontal

Axis

Saggital

ResultsPlus
Examiner Comments

Both marks were awarded for identifying clearly that the cartwheel occurs in the frontal plane, around the sagittal axis.

Total: 2 Marks

4 **Figure 5** shows a gymnast during their performance of a cartwheel.

(Source: © PAL)

Figure 5

(a) State the plane and axis used in **Figure 5** to perform this movement.

(2)

Plane

Frontal

Axis

Frontal

ResultsPlus
Examiner Comments

This response gains one mark for correct identification of the frontal plane.

Total: 1 Mark

Question 4 (b)

Candidates were asked to state the name of the antagonistic pair acting at the elbow during the cartwheel, allowing extension of the arm at the elbow.

Most candidates achieved 2 or 0 marks for this question.

Those scoring 0 marks tended to be blank or the correct muscle pair, but assigned the incorrect role.

(b) State the antagonistic muscle pair acting at the elbow that allow the gymnast to extend the arm at the elbow during the cartwheel.

(2)

Agonist

tricep

Antagonist

bicep

ResultsPlus
Examiner Comments

This response gains both marks.

Correct identification of the tricep as the agonist when the arm extends at the elbow, and the bicep as the antagonist during the action.

Total: 2 Marks

(b) State the antagonistic muscle pair acting at the elbow that allow the gymnast to extend the arm at the elbow during the cartwheel.

(2)

Agonist

Bicep

Antagonist

tricep

ResultsPlus
Examiner Comments

This response gains no marks.

Although the biceps and triceps are identified, they are assigned the incorrect action during elbow extension.

Total: 0 Marks

Question 4 (c)

Candidates were asked to classify the joint at the hip. Most identified the hip as a ball and socket joint, correctly.

Question 4 (d)

Candidates were asked to identify the type of movement that had occurred at the gymnast's hip.

A variety of movements was offered in response: many identified abduction correctly, whilst popular incorrect responses were extension and adduction.

Question 4 (e)

In this part of the question, candidates were asked to explain the importance of the short bones in the wrists during the movement.

Two marks were awarded, the first for identification that this type of bone provides strength or can be used for weight bearing.

The second mark was for linking this to the image, ie it allows the performer to take their body weight on their hands.

Many candidates achieved at least one mark for this question, often making the link between the image and weight bearing.

(e) Explain the importance of the short bones in the gymnast's wrists during the movement shown in **Figure 5**.

(2)

Short bones are weight bearing. This allows the gymnast to support his body and hold it up when performing the cartwheel.

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Examiner Comments

This response gains both marks.

One mark for the function of weight bearing and one for application of this function to the question context, eg to support/hold the body up during the cartwheel.

Total: 2 Marks

(e) Explain the importance of the short bones in the gymnast's wrists during the movement shown in **Figure 5**.

(2)

Short bones are important as they're able to withstand high intensity and enable security and stability throughout the body

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Examiner Comments

This response gains 1 mark for the function of short bones.

The second mark is not awarded because there is no application to the question context.

Total: 1 Mark

Question 4 (f)

The final part of this question asked candidates to describe the range of movement possible at condyloid joints.

Most candidates identified at least one range of movement accurately, eg flexion and extension or circumduction.

Many candidates included rotation incorrectly, which did not gain a mark.

As a description was required there was no need for explanation of the movements, just the ranges of movement possible.

Candidates should remember that a range of movement, unless rotation and circumduction, has a start and a finish, eg flexion to extension. If they only mention one of these, it would not be considered 'a range.

(f) Describe the **range** of movement possible at condyloid joints. Wrist

(3)

The condyloid joints (eg wrists) are able to to move in movements such as : abduction, adduction, circumduction, flexion and extension.

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All marks were awarded, one for each correct range of movement.

Total: 3 Marks

(f) Describe the **range** of movement possible at condyloid joints.

(3)

Condyloid joint is found at the wrist. the range of movement available would be Rotation and Circumduction these are to be able to throw things

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A mark is awarded for circumduction.

No mark awarded for rotation because this is not possible at a condyloid joint.

Total: 1 Mark

Question 5

This question also focusses on movement analysis.

Candidates were supplied with two images of a footballer about to kick the ball.

The first image (position A) showed the preparation prior to the action, the second image (position B) showed the completed action. Candidates were asked to analyse the action taking place at the knee and ankle that caused the movement from position A to position B. Because position A was the starting point there was no requirement to analyse how that position was achieved. Marks were awarded solely for correct analysis regarding position B.

Although the knee appeared more well-known, many candidates were able to identify the antagonistic muscle pair acting at the knee, even if the action was not well-known.

To gain all available marks for this type of question candidates need to:

- identify the joint action
- state the antagonistic muscle pair
- state the action of each that results in the stated joint action.

Appropriate technical terminology should be used throughout.

Candidates need only to discuss the movement to arrive at position B.

There is no need to write about position A in this type of question.

5 **Figure 6** shows a footballer kicking a football. His right knee and right ankle are circled.

Position A **Position B**

(Source: © OSTILL is Franck Camhi/Shutterstock)

Figure 6

Analyse the action of the antagonistic muscle pairs at the **circled** joints of the right **knee** and right **ankle** that causes the movement from **Position A** to **Position B** in **Figure 6**.

Knee q@ quadricep extents
h S hamstring flexes

(3)

Starting in position A the knee is flexed meaning the agonist is the hamstring is contracted while the quadricep relaxes. To then bring it through to the extended position in B, the hamstrings relax allowing the quadriceps to contract and extend the knee so it's able to kick the ball.

Ankle

dorsi = up = tibulas anterior
planter = down gastrecimus

(3)

In position A the ankle is dorsiflexed meaning the tibulas anterior is working as the agonist and is contracted while the gastrecisus is relaxed. To position B the ankle becomes plantarflexed meaning the ~~gastrecisus~~ tibulas anterior relaxes to allow the ~~tibulas anterior~~ gastercnemius to contract, bring the ankle pointed down to that plantarflexed position

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Examiner Comments

The joint action at the knee and ankle is identified correctly, the antagonistic muscle pairs responsible for the action are correct, as is their specific action in allowing the movement.

Total: 6 Marks

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Examiner Tip

Read the question carefully – only give the information required.

Analyse the action of the antagonistic muscle pairs at the **circled** joints of the right **knee** and right **ankle** that causes the movement from **Position A** to **Position B** in **Figure 6**.

Knee

(3)

From ~~point A~~ position A the knee is bent meaning the hamstring is contracting and the quadricep ~~is~~ is relaxing. ~~The~~ Then in position B the knee has extendended meaning the quadricep is contracting and the hamstring is relaxing.

Ankle

(3)

From position A, the ankle is plantar flexion meaning the gastrocnemius is contracting and the tibilas anterior is relaxing, then in position B, the ankli is dorsi flexion meaning the tibilas anterior is contracting and the gastrocnemius is relaxing.

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Examiner Comments

All three available marks for analysis of the action at the knee were given, and one mark for the ankle, for correct identification of the antagonistic muscle pair.

The joint action at B and the specific action of each muscle is stated incorrectly, thus no further marks awarded.

Total: 4 Marks

Question 6 (a)

This question asked candidates to identify the type of health missing from the definition. Most candidates correctly identified emotional health.

Question 6 (b)(i)

This question asks about the relationships between exercise and performance.

Many candidates opted correctly for the obvious relationship that if you increase exercise this should have a positive impact on performance.

Those who did not gain the mark tended to give either a definition of both with no attempt to link the terms, or by stated they were both aspects of physical health.

Health, fitness, exercise and performance affect each other because of the relationships between them.

(b) (i) State **one** relationship between exercise and performance.

(1)

The more you exercise the better you will perform.

ResultsPlus
Examiner Comments

This response gains a mark for making an appropriate link between exercise and performance.

This response demonstrates the level of detail required for a one mark 'state' question.

Total: 1 Mark

Health, fitness, exercise and performance affect each other because of the relationships between them.

(b) (i) State **one** relationship between exercise and performance. how well skill performed

physical activity done to improve (1)
maintain fitness or health

They both help improve your fitness. If your exercise level and performance is good your fitness well be good/ at a high standard.

ResultsPlus
Examiner Comments

This response gains no marks.

Rather than look for a relationship between exercise and performance the link is made between these terms and fitness.

Total: 0 Marks

Question 6 (b)(ii)

This question asks about the relationships between health fitness, exercise and performance.

Candidates had a choice, selecting the two terms they wished to use. The relationship needed to be between two from health, fitness and exercise. Many learners, sensibly, went for the obvious, linking increased exercise to increased fitness, although the link between exercise and improved health was also a popular correct response.

(ii) State **one** relationship between any **two** of the following:

- Health
- Fitness
- Exercise

(1)

Exercising frequently helps to improve your health.

ResultsPlus Examiner Comments

This response gains 1 mark for the link between exercise and health, stating that frequent exercise will improve health.

ResultsPlus Examiner Tip

The relationship is about how one affects the other.

(ii) State **one** relationship between any **two** of the following:

- Health
- Fitness
- Exercise

(1)

The better someones health is the better their fitness ~~whole~~ will be.

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Examiner Comments

This response gained 0 marks, someone who is healthy is not necessarily fitter.

Question 6 (c)

Candidates were provided with a brief outline of an individual's training programme.

Using this information, candidates were asked to give an example of how the principle of training time and the principle of training progressive overload could be applied to the training programme.

Therefore, in order to gain marks candidates needed to provide specific examples, rather than a general description of the meaning of the principles.

An individual's fitness can be improved through the application of the principles of training.

Figure 7 gives an outline of an individual's training programme.

- I train 4 times a week.
- Each of my training sessions are in a gym.
- I work at 60% of my maximum heart rate in my aerobic target zone.
- Each gym session lasts 60 minutes.

Figure 7

Complete **Table 3** by:

(c) Giving **one** example of how each of the principles of training could be applied to the training programme in **Figure 7**.

Use a **different** example for each principle.

Principle of training	Example
Time	doing a gym session for an hour and 30 minutes instead of 60 minutes. (1)
Progressive overload	moving from 60% of max heart rate to 70% overtime to ensure adaptations to the body are made (1)

Table 3

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In this response, one mark was awarded for each example.

The example for the principle time was a 90 minute training session. Any time reference would have been accepted, eg 60 minutes (the time in the question) because this is an application of the principle.

The example for progressive overload was an increase in percentage of max heart rate up to 70%.

Alternative popular examples for this training principle were training 5 times a week, (as previously 4) or increasing weights lifted by 1 kg, (acceptable as outline states training is in a gym).

Total: 2 Marks

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Examiner Tip

Do not give a description or explanation if a question asks for an example.

Complete **Table 3** by:

(c) Giving **one** example of how each of the principles of training could be applied to the training programme in **Figure 7**.

Use a **different** example for each principle.

Principle of training	Example
Time	4 times a week for 6 months (1)
Progressive overload	~~add more sessions decrease amount of times you train for a week, to avoid~~ increase intensity ~~not~~ gradually (1)

Table 3

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Examiner Comments

No mark is awarded for the example of increasing the number of sessions: this would be appropriate for frequency or progressive overload but not the principle time.

No mark is awarded for the description of the meaning of the principle progressive overload.

Total: 0 Marks

Question 6 (d)

This question asked candidates to identify a long-term training effect on the cardiovascular system, explaining why this effect would benefit a long-distance runner.

A number of correct long-term training effects was used in responses, the more popular linking to cardiac hypertrophy.

Without a valid long-term effect, no marks were awarded with the following exceptions: where candidates referred to lower heart rate, or increased cardiac output (rather than stating lower resting heart rate or increased maximum cardiac output).

Whilst these were not awarded a mark for the long-term effect, if the remainder of the response was developed appropriately, eg resulting in increased blood flow so more oxygen could be delivered, marks could be awarded.

Regular training causes long-term training effects.

(d) Explain the benefit of **one** long-term training effect on the **cardiovascular** system for a long-distance runner.

(3)

One ~~a~~ long term ~~effect of~~ training effect on the cardiovascular system is ~~hypertrophy~~ cardiac hypertrophy. This is when the heart becomes bigger and stronger. An effect of this is that the stroke volume increase. The benefits performance as more oxygenated blood can be travel to the working muscles quickly to transport oxygen and nutrients such as oxygen and glucose as well as carrying deoxygenated blood away with waste product such as lactic acid and carbon dioxide more quickly.

ResultsPlus
Examiner Comments

This response gains full marks.

One mark is given for the:

- identification of the long-term effect on the CV system
- expansion that this would mean an increase in stroke volume
- benefit of this in terms of performance – that there would be greater oxygen delivery to the working muscles

Total: 3 Marks

Regular training causes long-term training effects.

(d) Explain the benefit of **one** long-term training effect on the **cardiovascular** system for a long-distance runner.

(3)

When doing long-distance running over time your resting heart rate can lower as once your used to training that distance ecchtime your Cardiovascular System is recovering quicker.

ResultsPlus
Examiner Comments

This response gains a mark for identification of a lower resting heart rate or a faster recovery.

No further marks are awarded because there is no development to link why recovery would be faster, or the benefit of this.

Total: 1 Mark

Question 7 (a)

Candidates were presented with fitness test results for four athletes.

In this part of the question, candidates had to use the data and select the athlete with the highest rating for speed. The correct answer was athlete 3, because they had the highest rating for the 30m sprint.

Question 7 (b)

Using the same data table, candidates were asked to justify why Athlete 1 would be selected for the 110m hurdling event.

To answer the question, candidates needed to consider what components of fitness were being tested in the data table. Then, they needed to think about the requirements of the hurdling event, before deciding who would be the best athlete.The ratings for the Cooper 12-minute run were therefore irrelevant to this question and did not need considering.

Of the remaining three tests for power, speed and flexibility, only Athlete 1 was rated at very good in all three tests and thus was the appropriate choice.

However, candidates needed to explain why. Correct responses focussed on Athlete 1 because they had very good power and speed: power to clear the hurdle and speed to run quickly between the hurdles.

Alternatively, some candidates focussed on flexibility, identifying that they were the most flexible therefore would have good form getting over the hurdle.

(b) Justify, using the ratings in **Table 4**, why the coach would select Athlete 1 for the 110m hurdling event.

(2)

The coach would select Athlete 1 for 110m hurdles as he did very good in both Speed / power which is required for jumping and sprint during the hurdles race.

ResultsPlus
Examiner Comments

This response receives marks for:

- using the data and identifying that Athlete 1 was selected due to the very good scores in speed and power
- justifying why this made them a good choice, eg they would be able to clear the hurdles and sprint

Total: 2 Marks

ResultsPlus
Examiner Tip

When asked to justify, make sure you give a clear reason why.

(b) Justify, using the ratings in **Table 4**, why the coach would select Athlete 1 for the 110m hurdling event.

(2)

This is because compared to the other three athletes, athlete 1 has the highest rating for flexibility. Flexibility is the ability for the body to move through a large range of movement. A hurdles event athlete would need high levels of flexibility because the sport requires an athlete to jump over ~~an object but~~ a hurdle but maintain control of your body.

ResultsPlus
Examiner Comments

This response gains a mark for using the data and identifying that they were selected due to the very good score for flexibility.

No other mark is awarded because the justification why this makes them the sensible choice is not clear.

Maintain body control would normally be associated with balance or co-ordination: there needed to be reference to how flexibility helped in terms of shape or technique.

Total: 1 Mark

Question 7 (c)

Using the same data table, candidates were asked to justify which athlete would be most likely to be chosen to run the 3000m.

Unlike the previous question, the candidate had to use the data to make the selection and then justify their choice.

Many candidates selected Athlete 2 correctly, for the 3000m ,and gave at least a partial justification, justifying in terms of their excellent Cooper 12-minute run rating or excellent CV fitness.

To gain all 3 marks, both of these or equivalent points needed making.

The 3000m is a long-distance running event.

(c) Justify, using the ratings in **Table 4**, which athlete would **most likely** be chosen to run the 3000m.

(3)

Athlete 2, as they have an excellent result for the 12 minute cooper run, which test for Cardiovascular fitness. This means Athlete 2 will be able to ~~work~~ run aerobically for long ~~per~~ periods of time.

ResultsPlus
Examiner Comments

This response gains full marks.

1 mark is given for correct selection of Athlete 2, 2 marks for the justification, linking selection to the Cooper 12-minute run and the appreciation that because this is a test for CV fitness, the athlete would be able to work aerobically for longer.

Total: 3 Marks

The 3000m is a long-distance running event.

(c) Justify, using the ratings in **Table 4**, which athlete would **most likely** be chosen to run the 3000m.

(3)

Athlete 2 is most likely to be chosen as the athlete has the 'Excellent' result for the cooper 12-minute test, in which to achieve this result an athlete must run ≥3000m in 12-minutes, meaning the ~~athlete~~ 2 would be chosen. Athlete 2's other grades/results would be considered acceptable too as it shows general fitness across the board.

ResultsPlus
Examiner Comments

This response gains one mark for the correct selection of Athlete 2 and one mark for a partial justification, linking selection to the Cooper 12-minute run.

No marks are awarded for a description of the test or for attempted links to other fitness tests.

To gain the third mark there needed to be a link to excellent CV fitness or the effect of this, eg reduced rate of fatigue.

Total: 2 Marks

Question 8

Candidates were presented with an image of a swimmer completing a high dive.

The question asked why the diver in the image could suffer a concussion. Two marks were available. One mark was for knowing that a concussion was due to a blow to the head and one mark for explaining how the diver may come to hit their head.

Popular correct responses referenced:

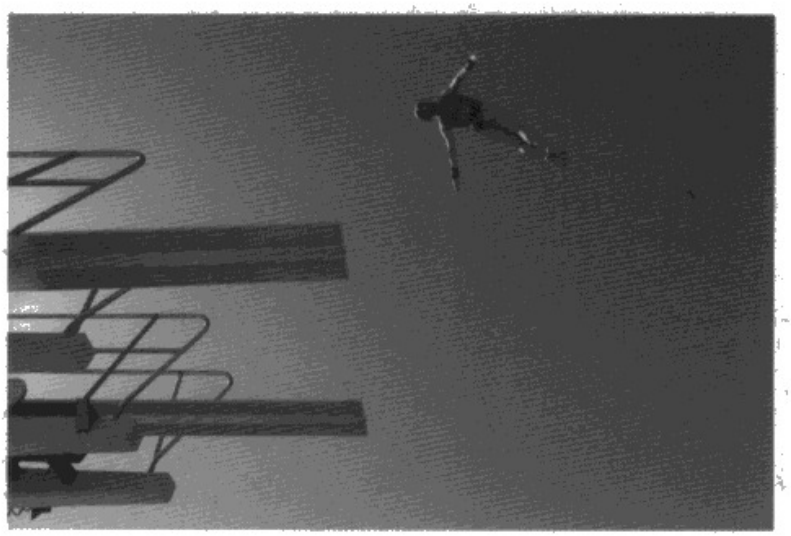
- the pool being too shallow so they hit their head on the bottom of the pool or
- that they could make a mistake and hit their head on the board.

Most candidates gained at least one mark for this question.

A few candidates explained that by hitting the head on the board this caused an impact or force on the brain: this explanation was also accepted.

Candidates should use any additional information given, to help them. Here, it can be seen that the diver is close to the diving-board.

8 Explain why the diver in **Figure 8** could suffer a concussion.



(Source: © sirtravelalot/Shutterstock)

Figure 8

The diver could ~~land~~ forget to tuck their hands together above their head and go head first hitting the water with a bigger surface area.

ResultsPlus
Examiner Comments

This response gains marks for:

- the explanation of the possible error in technique
- this resulting in the diver hitting their head

Total: 2 Marks

ResultsPlus
Examiner Tip

Use the information you are given.

8 Explain why the diver in **Figure 8** could suffer a concussion.

(Source: © sirtravelalot/Shutterstock)

Figure 8

His head could possibly hit the diving board.

ResultsPlus
Examiner Comments

This response gains a mark for identifying correctly that a possible cause of concussion would be if the diver hit their head on the diving-board.

To gain the second mark there also needed to be a reason why this might happen, eg due to an error in technique.

Total: 1 Mark

Question 9 (a)(i)

Candidates were given a description of the effect of a performance-enhancing drug (PED) and asked to name the PED from its description.

In this part of the question, the description was about a PED that allowed performers to train harder and for longer, helping them increase muscle strength and power.

Of the two descriptions, Q9a(i) and Q9a(ii), this PED was more well-known with many candidates identifying anabolic steroids correctly, or human growth hormone.

Question 9 (a)(ii)

Candidates were given a description of the effect of a performance enhancing drug (PED) and asked to name the PED from its description.

In this part of the question, the description was about a PED that leads to quick weight-loss as urine is passed sooner, so may also be used to mask the presence of other drugs.

This description appeared more challenging for candidates than the description in part (i). Diuretics were identified correctly by many candidates but there was also a range of incorrect responses, eg beta blockers, analgesics.

Question 9 (b)

This part of the question asked learners to state the meaning of the term blood doping.

There was one mark available for responses thus a great deal of detail was not required in the response.

There should have been far more space than required within the answer booklet but some candidates gave very thorough and detailed descriptions of the process, rather than be guided by the command word and mark value of the question.

To gain the mark, the response needed to make clear that it was the process of injecting (additional) blood back into the body.

Many learners did identify this correctly. Incorrect responses often linked to injecting oxygen, rather than blood. Incorrect responses tended to be vague or make general reference to performance-enhancing drugs.

(b) State the meaning of the term blood doping.

(1)

Blood doping is where blood is transferred into a human from a bag to increase there blood levels

ResultsPlus
Examiner Comments

This is an accurate, succinct response, appropriate to the command word and question value.

The mark is awarded for blood being transferred into the body to increase blood levels.

Total: 1 Mark

ResultsPlus
Examiner Tip

If the command word is state you do not need to give an explanation or too much detail.

(b) State the meaning of the term blood doping.

(1)

having artificual red blood cells in the body to have more oxygen being pumped around the body during exercise

ResultsPlus
Examiner Comments

No mark was awarded for artificial red blood cells in the body.

Ignoring the fact they were artificial, it needed to be clear how they came to be in the body.

Total: 0 Marks

Question 9 (c)

This part of the question asked candidates to give an example of a sport or physical activity where blood-doping may occur.

Many candidates gained one mark for identifying an endurance-based sport or physical activity, such as a triathlon, marathon or the *Tour de France*.

Where the mark was not awarded tended to be due to the vagueness of the response, eg running or swimming, or due to an unsuitable selection of activity, eg 100m sprint.

(c) Give **one** example of a sport or activity where blood doping may occur.

(1)

Long distance events e.g marathons.

ResultsPlus
Examiner Comments

This response gained a mark for the example of a marathon.

Total: 1 Mark

(c) Give **one** example of a sport or activity where blood doping may occur.

(1)

Archery

ResultsPlus
Examiner Comments

No mark was awarded for archery, because it is not an activity usually associated with blood-doping.

Question 10 (a)

The question contained an image of a 10,000m runner and a shot putter. A table of fitness test results was also provided.

In this part of the question, candidates needed to use the table to establish which component of fitness was tested by both athletes.

The tests for the 10,000m runner were: the sit and reach test and the Harvard step test. The tests completed by the shot putter were the vertical jump test and the Cooper 12-minute run.

Many candidates identified correctly that both athletes tested their CV fitness. A popular incorrect response was muscular endurance, and whilst this component of fitness might be used during the test, it is not what is being measured by the test.

Other incorrect responses included repeating the names of a test or describing the component of fitness.

One way to approach this type of question is to write the component of fitness tested next to each test. That way, it is easy to see the two that match!

Table 6 shows the different fitness tests carried out by each performer.

Performer	Fitness test 1	Fitness test 2
10,000m runner	Sit and reach test	Harvard step test
Shot putter	Vertical jump test	Cooper 12-minute swim

Table 6

(a) State the component of fitness tested by **both** performers.

(1)

cardiovascular endurance

ResultsPlus
Examiner Comments

This response gained a mark for identifying cardiovascular endurance correctly.

Total: 1 Mark

Table 6 shows the different fitness tests carried out by each performer.

Performer	Fitness test 1	Fitness test 2
10,000m runner	Sit and reach test	Harvard step test
Shot putter	Vertical jump test	Cooper 12-minute swim

Table 6

(a) State the component of fitness tested by **both** performers.

(1)

Agility flexability

ResultsPlus
Examiner Comments

This response gained no marks.

The only acceptable response was cardiovascular endurance or an equivalent term.

Total: 0 Marks

Question 10 (b)

This question asked candidates to describe the test protocol for the sit and reach test. Three marks were awarded for a description that would result in accurate replication of the test.

Marks could be awarded for a variety of points, focussing on each phase of the test. Eg placing feet flat against the box, leaning forward with hands as far as possible and then recording the distance reached by the fingertips.

Most candidates gained some marks for this question. A very popular correct response was to have the legs straight or to reach forward with the hands.

Due to the name of the fitness test even those with limited knowledge of the test protocol, evidenced by the remainder of the response, were able to gain a mark for reaching forward.

Candidates should think about the test and the stages that it has to go through.

Read through the answer: could anyone repeat the test based on what they have written?

The 10,000m runner carries out the sit and reach test.

(b) Describe how to carry out the sit and reach test.

(3)

- You take off your shoes ~~shoes~~ and socks.
- Then you sit down and place your feet flat on the box in front of you
- Then you reach as far towards as you can
- Then the person helping you measure to ~~how~~ how far you reached.

ResultsPlus
Examiner Comments

This response gains marks for:

- taking shoes off
- placing feet flat against the box
- reaching forwards

Total: 3 Marks

The 10,000m runner carries out the sit and reach test.

(b) Describe how to carry out the sit and reach test.

(3)

Where you sit down then have to measure how far your arm reaches out and extends to see how far you can reach.

ResultsPlus
Examiner Comments

One mark is awarded for reaching forwards with the arm.

There was insufficient detail to award further marks.

Total: 1 Mark

Question 10 (c)

This question asked candidates to explain one reason why a shot putter would use the vertical jump test to measure his fitness.

Because this was an 'explain' question a reason must be given and then expanded.

In this instance, the reason should have related to it being a test of power. The expansion should then link power to the shot putter.

Many candidates gained at least one mark for knowing this was a test of power. Many of these candidates went on to give an appropriate expansion, eg that the shot putter needed power to throw the shot a long way.

No marks were awarded for those responses confusing a fitness test with a training method, ie no mark for stating it was a way to improve power.

(c) Explain **one** reason why the shot putter in **Figure 9** would use the vertical jump test.

(2)

One reason the shot putter would use the vertical jump test is could be to test for power. In shotput, power is vital to make sure the shotput is explosively thrown as far as the performer can.

ResultsPlus
Examiner Comments

Marks are given for:

- a test of power
- the relevant expansion linking power to the shot put, eg, it being vital to shot put to make the shot travel a long way

Total: 2 Marks

(c) Explain **one** reason why the shot putter in **Figure 9** would use the vertical jump test.

(2)

Shot put requires power as its a fast movement that needs srength. The vertical jump test, tests power. This would help shotte putter see how to improve and increase their power.

ResultsPlus
Examiner Comments

One mark is given for a test of power.

The second mark is not gained because the response is too vague. The examiner needs to know *why* shot put requires power, not just *that* it does.

Question 10 (d)

This question asked candidates to justify why the shot-putter should change the Cooper 12-minute swim for another fitness test. In this type of question, candidates are told the outcome: the shot-putter needs to change the swim test. Candidates need to to give a good reason why.

The first mark was awarded for the reason, eg it is a test of CV fitness, which is irrelevant to shot put.

The second mark is for appropriate expansion to support the reason. For example, because shot put is an anaerobic, high intensity event. Whatever the expansion, it should link to shot put and not CV fitness.

Alternatively, candidates could talk about the lack of specificity of the test because the test is water-based, or a test of CV fitness.

(d) Justify why the shot putter should change the Cooper 12-minute swim for another fitness test.

(2)

Shot put it an anerobic event so he doesn't need cardiovascular endurance and he do his sport doesn't involve water. A more sutiable test would be grip dynamometer to measure strength.

ResultsPlus
Examiner Comments

There are several ways in which marks could be awarded for this response.

One mark for shot put being anaerobic and so he does not need aerobic endurance (reason and expansion).

A mark could also have been awarded for the link to it being a water-based test. However there is no expansion mark for this, in this response.

Alternatively, a mark could have been awarded for indicating a more suitable test to use.

Total: 2 Marks

(d) Justify why the shot putter should change the Cooper 12-minute swim for another fitness test.

(2)

The shot putter should change it because the cooper 12-minute swim test measures your cardiovascular fitness and it isn't beneficial because they're not running any where so they don't need a high CUF

ResultsPlus
Examiner Comments

One mark is awarded for this being a test of CV fitness.

The second mark is not awarded because 'not running anywhere' is too vague: greater clarity over the intensity of the event is required.

Total: 1 Mark

Question 11

This question asked candidates to evaluate the importance of three short-term effects on a handball performer. Candidates were told the length of the match and an image was given to help candidates visualise the type of activity, to help them to apply their knowledge.

The short-term effects were:

- lactate accumulation
- increased depth of breathing
- increased heart rate

Credit was given for a broad range of answers, with the complete mark range covered.

Although well-known by many candidates, lactate accumulation also appeared to be a challenging topic for some. Those responses tended to focus on lactate accumulation as being a positive effect or of no consequence to performance.

Incorrect comments were made linking lactate accumulation to cramp and Delayed Onset Muscle Soreness (DOMs), rather than 'in-game' muscle fatigue and its effect on performance.

Correct responses focused on lactate being produced due to lack of oxygen, therefore during anaerobic respiration, or when the performer was 'jumping' as shown in the image, leading to muscle fatigue.

Increased depth of breathing was often linked correctly to increased oxygen intake and CO_2 removal, delaying fatigue and allowing the performer to work aerobically throughout the 60 minute match. Some candidates also made the link between increased oxygen intake in response to oxygen debt or to delay the onset of lactate accumulation.

Increased heart rate was often linked correctly to increased oxygen supply to the muscles and the ability to delay fatigue. Some candidates also identified that the increased heart rate meant greater oxygen supply because the blood would be travelling faster. Occasionally, reference was made to nutrient transfer for energy.

Overall, candidates presented well-structured responses, with the majority of candidates achieving Level 2 despite this being traditionally a more challenging topic area.

Candidates should plan their essays so that they can see how to develop their answers.

They should start with a fact that is then applied to the question context and then evaluate it. Normally, this is in relation to how important the fact is to the performer in the question.

11 Christina plays handball. Each match lasts 60 minutes. **Figure 10** shows a handball match.

Table 7 shows three short-term effects of playing handball on Christina's body systems.

(Source: © Dan POTOR/Shutterstock)

Figure 10

Short-term effects
Lactate accumulation
Increased depth of breathing
Increased heart rate

Table 7

Evaluate the importance of the **three short-term effects** listed in **Table 7** on Christina's handball **performance**.

(9)

Lactate accumulation is when lactic acid builds up in muscles after working anerobically. This will build up in the performer when sprinting around in there anerobic #zone it will most likley build up in the later stage of a game. This can cause the player to suffer from cramp or just muscle fatige causing them to be subbed off, go off with a minor injury or just not being able to contribute fully to the game.

Increased depth of breathing is when your body is in otygen debt so is trying to take on as much otygen as ~~possible~~ possible. When the performer is worting in there aërobic zone this can happen but when worting in there anerdaic zone it definatly happens as they work without otygen when sprinting to for a ball or to make an option for a pass. This can cause a player to fatigue which can stop them from ~~wa~~ performing at there best until otygen debt is recovered.

Increased heart rate is when your heart is pumping blood at an increased rate to get otygen to the worting musles. This happens when the player starts to warm up as 85% of blood then starts to go to the worting musles to allow the player to work harder for longer. Increased heart rate can allow the player to play at there best ability for longer because ~~muscles said~~ as musles use more otygen throughout the game.

ResultsPlus
Examiner Comments

This response achieves Level 3.

Maximum marks were awarded for this response.

Each paragraph focussed on one of the short-term effects of exercise and demonstrated knowledge, eg that lactic acids builds in the muscles, or that increased depth of breathing increases the oxygen inhaled.

Application: eg lactic acid is produced when the player works anaerobically

Evaluation, eg without the additional oxygen from increased depth of breathing, oxygen debt will not be met and the player's muscle will fatigue, resulting in them being sent off.

There is a clear link between all of the effects from the lack of oxygen due to the intensity of work to the increased oxygen intake and then delivery to delay fatigue.

This is a well-structured, well thought-out response.

Total: 9 Marks

ResultsPlus
Examiner Tip

Write a plan before you start your response.

11 Christina plays handball. Each match lasts 60 minutes. **Figure 10** shows a handball match.

Table 7 shows three short-term effects of playing handball on Christina's body systems.

(Source: © Dan POTOR/Shutterstock)

Figure 10

Short-term effects	
Lactate accumulation	3
Increased depth of breathing	1
Increased heart rate	2

Table 7

123
Bol - definition
NOT - why it is important

Evaluate the importance of the **three short-term effects** listed in **Table 7** on Christina's handball **performance**.

Nos - why its important to sport.

(9)

Increased depth of breathing is the increased capacity of breaths one takes per beat.
This is important because, this means that more oxygen is that one takes in increase and the amount of carbon dioxide that is exhaled increases.
This would be important for chistinas handball because, increased amount of oxygen intake means that her muscles are getting the energy it needs to continue on for an hour, also reduces muscle fatigue.

Increased heart rate is the increased amount of heart beats per minute.

This is important because, if the heart rate increases then the amount of oxygenated blood being pumped ~~over~~ around the body also increases.
This would be beneficial to Christina because she'll be able to perform for longer as oxygenated blood is being provided for all her working muscles.

Lactate accumulation is the production of the by product lactic acid.
Lactic acid builds up in the muscles causing ache and fatigue.
This is the least important short-term effect because, it would only decrease how long Christina would be able to play for. ~~because~~ The lactic to acid build up in her muscles will make her tired and unable to perform.

In conclusion, increased depth of breathing and increased heart rate are the most important short term effects.

ResultsPlus
Examiner Comments

This response achieved Level 2.

The response demonstrates mostly accurate knowledge, eg that lactic acid builds in the muscles, or that increased heart-rate means increased blood flow.

This knowledge is applied to the question context, eg that this will increase the amount of oxygenated blood being pumped to the muscles.

The evaluation is limited, eg reference is made to fatigue due to lactic acid.

However, the link between increased oxygen transport and aerobic respiration/delayed lactate accumulation could have been made, rather than assuming that lactate accumulation was, in fact, least important.

Total: 5 Marks

11 Christina plays handball. Each match lasts 60 minutes. **Figure 10** shows a handball match.

Table 7 shows three short-term effects of playing handball on Christina's body systems.

(Source: © Dan POTOR/Shutterstock)

Figure 10

Short-term effects
Lactate accumulation
Increased depth of breathing
Increased heart rate

Table 7

Evaluate the importance of the **three short-term effects** listed in **Table 7** on Christina's handball **performance**.

(9)

An increased ~~amount of~~ heart rate means that christina is able to work for one hour without fatig as ~~the~~ more oxygen would be pumped around her body. Linking to an increased depth of breathing, the more oxygen she breatns in the the more oxygen she nas supplied to her working muscals.

However, lactate accumulation mean that there is a build up in lactic acid which is toxic and can lead to fatig if not removed, however, due to the ~~athlete~~ increased depth of breathing lactic acid is removed.

Lactate accumulation ~~is~~ and increased depth of breathing

and increased heart rate are apart of the short-term effects for respiration.

ResultsPlus
Examiner Comments

This response achieved Level 1

The response is at the top of Level 1.

There is an attempt to evaluate, but this is impacted by the lack of depth/gaps in knowledge.

There is an attempt to link and apply isolated elements of knowledge. For example, increased oxygen intake means more oxygen can be transported due to increased heart rate, or that lactate accumulation can lead to fatigue.

These are all valid statements but limited in terms of breadth and depth.

Total: 3 Marks

Question 12

The context for this question is a 100m sprinter. Information is given about the components of fitness required for sprinting: power, speed, and reaction time.

Candidates are asked to evaluate the use of three different training methods to improve the sprinters performance.

To address the question demands candidates needed to demonstrate understanding of the training methods and evaluate the extent to which they would support development of the required components of fitness for sprinting.

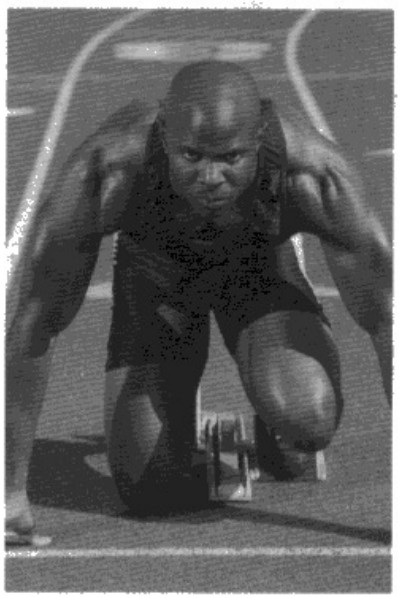
Interval training was often linked correctly to speed, although on occasion, focus was incorrect on its use for aerobic endurance.

Of the three training methods, plyometric training was least well-known. Where this was the case, it was often linked incorrectly to improving reaction time.

Continuous training was linked to aerobic fitness. Many candidates made the judgement correctly that this was an inappropriate choice of training method, because it failed to improve any of the required components of fitness.

Some candidates, although identifying the link to aerobic fitness, tried to link this to the sprinter in terms of recovery, rather than making the judgement that it was an inappropriate method of training.

12 Mason is a sprinter. **Figure 11** shows a sprinter waiting to start a race.
Sprinters require high levels of power, speed and reaction time to perform well in their event.



(Source: © sirtravelalot/Shutterstock)

Figure 11

Mason trains regularly, using interval training, plyometric training and continuous training.

Evaluate the importance of these **three** training methods in improving Mason's fitness to make him a better sprinter.

(9)

Continuous training is the ~~les~~ least important training method to Mason, as it ~~mainly~~ sometimes develops anaerobic ~~fitness~~ fitness but mainly develps aerobically. Continuous ~~training~~ training involves constant exercise for no less than 20 minutes and without breaks, improving Cardiovascular fitness. 100m sprint is an ~~aerobic~~ anaerobic event with a short duration and focus on power, speed and reaction time. Therefore, as continuous training doesn't relate to any of these components,

it would not improve Mason's 100m sprint or make him a better sprinter, ~~these~~ making it irrelevant and an unuseful and unimportant training method.

Plyometrics develop power and involve jumping onto and off of blocks to quickly lengthen and then ~~shorten~~ Shorten the muscles. Power is important to Mason's 100m sprint, as good levels of power would allow him to have a quick start off of the ~~low~~ blocks, giving him an advantage against his ~~other~~ competitors. Therefore, ~~this~~ developing power is essential for Mason's 100m sprint performance and highlights that plyometrics is a vital training method to make Mason a better sprinter.

Interval training it good at developing speed and involves sprinting a certain distance and then having an immediate rest (which is active and for a certain duration), this process is repeated many times for many intervals. Speed is essential to Mason's 100m sprint, ~~therefore~~ as the quickest/fastest runner wins the race. Therefore, as interval training improves this vital component of fitness, it is a very important

training method for developing Mason's performance.

In conclusion, the most important training methods which Mason uses are interval training and plyometrics - as they are most likely to improve his 100m sprint, making him a better sprinter.

ResultsPlus
Examiner Comments

This response achieved Level 3.

This is a well-structured response.

Each training method is dealt with in turn and knowledge about the training method is demonstrated.

There is then application to the question scenario and either within the paragraph or at the end of the response, the method is evaluated in terms of its importance to the sprinter's performance.

For example, continuous training is identified as the least important. This is the candidate's judgement, which they then support to make it an evaluation, rather than just opinion.

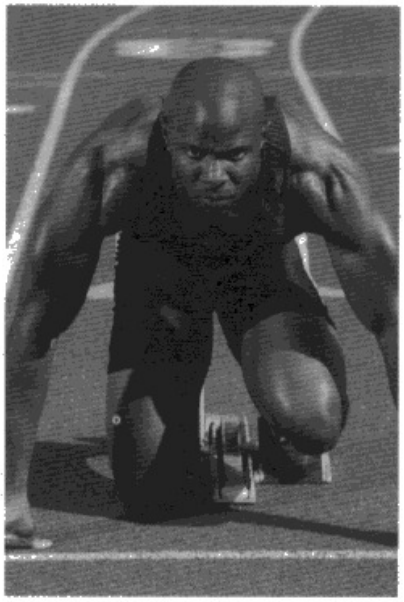
As part of the argument, we are told what continuous training is, what it is designed to develop and why this is not relevant to a sprinter and their event.

The evaluation around interval training is also excellent. The concluding paragraph is evaluative because it reflects arguments already made within the response.

Total: 9 Marks

Candidates should note that not only does the question state three training methods, but above the image there is also a statement about the necessary components of fitness to be a good sprinter.

12 Mason is a sprinter. **Figure 11** shows a sprinter waiting to start a race.
Sprinters require high levels of power, speed and reaction time to perform well in their event.



(Source: © sirtravelalot/Shutterstock)

Figure 11

Mason trains regularly, using interval training, plyometric training and continuous training.

Evaluate the importance of these **three** training methods in improving Mason's fitness to make him a better sprinter.

(9)

Plyometric training improves power, especially in the legs so this is important for Mason as he needs power at the start to get a good start and push off strongly and he also needs power during the race so he can keep running, so Plyometrics would improve his sprinting because it improves his power.

Interval training is important to his event as it is most suited to sprinting because it is where you would do a sprint then rest then do

another sprint then rest again. So this is important because it improves his speed because he is doing a lot of sprints, and if he is fast he will be able to do better during his event

continuous training would improve his fitness but wouldn't be very important to a sprinter as it is an anaerobic activity where as continuous improves your aerobic so continuous would not really help Mason.

Overall, plyometric and interval training are both very important because they suit Masons event but continuous does not, so is a lot less important

ResultsPlus
Examiner Comments

This response achieved Level 2.

The response demonstrates isolated elements of knowledge about the training methods, but does apply the knowledge they have to sprinting, eg, plyometrics will be good to improve the sprinters power, or interval training will help the sprinter's speed.

However, there is lack of supporting evidence for the attempted evaluations, except for continuous training where there is recognition that of the three methods, continuous would be least important as sprinting is anaerobic. Thus, there is justification for this statement.

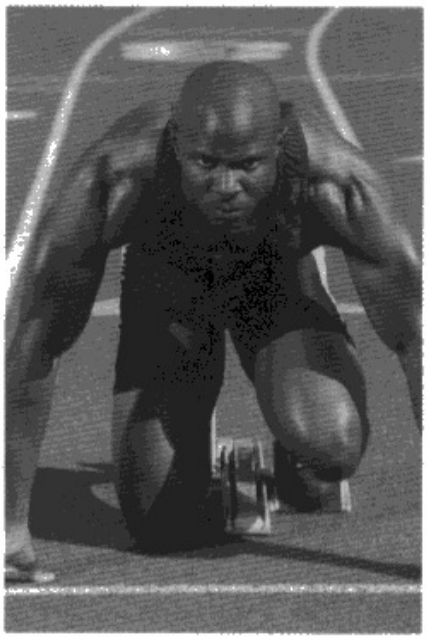
The other training methods are not evaluated in this way.

Total: 5 Marks

ResultsPlus
Examiner Tip

Use the information given to you in the question.

12 Mason is a sprinter. **Figure 11** shows a sprinter waiting to start a race.
Sprinters require high levels of power, speed and reaction time to perform well in their event.



(Source: © sirtravelalot/Shutterstock)

Figure 11

Mason trains regularly, using interval training, plyometric training and continuous training.

Evaluate the importance of these **three** training methods in improving Mason's fitness to make him a better sprinter.

(9)

Interval training improves the athletes speed or reaction time ~~[illegible]~~ endurance.

Plyometric training improves the athletes power

Continuous training allows the athlete to improve their muscular endurance.

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Examiner Comments

This response achieved Level 1

Although there is limited content within the response, the candidate has applied some knowledge accurately to the question context. They know that interval training can be used to develop speed and that this is important to the sprinter, similarly with plyometric training.

Total: 2 Marks

Paper Summary

Based on their performance in this examination, candidates are offered the following advice:

- Use appropriate technical language when answering anatomy or movement analysis questions. For example, muscles contract and relax rather than flex and extend (Q05)
- Use the command words and number of marks available to help you decide the depth required in your response. For example, 'state' questions do not need descriptions or explanations (Q09(b))
- Make sure you use any additional information given to you in the question: it is there to help (Q12)
- If asked to provide two of something make sure you use clearly different types of examples. For example, the joint action at two different joints is still an example of joint action (Q02(c))
- If asked for examples make them clear. For example, a games player jogging back to position, rather than just 'running' (Q03(di))
- If asked for examples do not give descriptions (Q06c)

Grade boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

https://qualifications.pearson.com/en/support/support-topics/results-certification/grade-boundaries.html

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