



Examiners' Report

June 2023

GCSE Physical Education 1PE0 01

Edexcel and BTEC Qualifications

Edexcel and BTEC qualifications come from Pearson, the UK's largest awarding body. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers. For further information visit our qualifications websites at www.edexcel.com or www.btec.co.uk.

Alternatively, you can get in touch with us using the details on our contact us page at www.edexcel.com/contactus.



Giving you insight to inform next steps

ResultsPlus is Pearson's free online service giving instant and detailed analysis of your students' exam results.

- See students' scores for every exam question.
- Understand how your students' performance compares with class and national averages.
- Identify potential topics, skills and types of question where students may need to develop their learning further.

For more information on ResultsPlus, or to log in, visit www.edexcel.com/resultsplus. Your exams officer will be able to set up your ResultsPlus account in minutes via Edexcel Online.

Pearson: helping people progress, everywhere

Pearson aspires to be the world's leading learning company. Our aim is to help everyone progress in their lives through education. We believe in every kind of learning, for all kinds of people, wherever they are in the world. We've been involved in education for over 150 years, and by working across 70 countries, in 100 languages, we have built an international reputation for our commitment to high standards and raising achievement through innovation in education. Find out more about how we can help you and your students at: www.pearson.com/uk.

June 2023

Publications Code 1PE0_01_2306_ER

All the material in this publication is copyright

© Pearson Education Ltd 2023

Introduction

Whilst centres will have been aware of the changing format of the examination assessment, this was the first cohort to have taken the paper in its new format.

The unit content remained unchanged, but the presentation of the assessment was different. The paper was split into three sections:

- Section A Applied Anatomy and Physiology and movement analysis, assessed content from Topics 1 and 2 of the specification
- Section B Physical Training, assessed Topic 3 from the specification
- Section C assessed the extended writing question.

The total mark for the paper has been reduced from 90 marks to 80 marks.

Candidates were still assessed on the same skills and areas of knowledge.

The level of difficulty of the paper was in line with previous series'. Candidates and centres continued to show good preparation, with the full range of marks being achieved across all questions.

Section A and Section B begin with four multiple-choice questions; these are designed to be accessible for candidates. The remainder of Section A and Section B 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).

Section C, the final section of the paper, comprises one extended response question.

To access all available marks on 1PE0 01, candidates needed to recall knowledge, and demonstrate understanding of this knowledge, through its application to a range of question scenarios. They needed 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 identified correctly the Assessment Objectives (AOs) they were addressing within the extended response question, although this was not a requirement.

Question 2 (a)(b)(c)

Candidates were asked to identify two bones from two x-ray images, one of the knee, one of the hand. Having identified the bone in each image, the function of the bone type and an example of its use in sport or physical activity were also required.

The bones were the femur and carpals. When stating the function of each bone type it was important that candidates read the question carefully to note the change in requirement. They had to name the bone in (a) but state the function of the bone type for (b).

To answer (b) candidates needed to know the correct bone type of the femur, (long) and carpals, (short) and think about the function of each. A correct function of long bones is leverage or movement, a correct function for short bones, and a common accurate response, was weight bearing.

To gain marks for (c) any suitable example of the function of the relevant bones was credited, eg kicking a ball and holding a handstand.

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	Femur (1)	aid movement (1)	when running (1)
B	Forearm Carples (1)	weight bearing (1)	hand stand (1)



This response gains all available marks, identifying correctly the bones from the image, the function of the bone type and providing an example of their use within sport.

Total: 6 marks



Make sure any examples you give are always clear and link to the question context you are given.

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	long bone (1)	aid movement (1)	when running in a race (1)
B	short bone (1)	weight bearing (1)	when doing a handstand in gymnastics (1)



ResultsPlus
Examiner Comments

This response states the bone type incorrectly, rather than stating the name of the bone, and therefore receives zero marks for (a).

The remainder of the response is correct and receives 4 marks.

Total: 4 marks



ResultsPlus
Examiner Tip

Read table headings carefully so you know whether the name of the bone or the bone type is required.

Question 3 (i)

This part of the question asked candidates about the role of flat bones.

Candidates needed to know that the ribs were an example of flat bones, that the function is to protect the heart or lungs from being punched during a boxing match. The most challenging aspect of the question was classifying the ribs as flat bones, the required application of protection if punched was the most accessible.

3 Complete the following statements about the classification of bones.

- (i) The ribs are examples of flat bones bones. The ribs provide protection for the lungs. For example, in boxing they will protect the boxer if they get punched hard in the chest during a round.



This response gains three marks for identifying correctly the type of bone, providing an example of its protective function and applying this to the boxing context.

Total: 3 marks

3 Complete the following statements about the classification of bones.

(i) The ribs are examples of Irregular bones. The ribs provide protection for the Vital organs. For example, in boxing they will protect the boxer if they get punched in the ribs. It will do damage to the ribs and not the organs.



Whilst identifying the type of bone incorrectly, this response gives an example of its protective function and then applies it to the boxing context.

Total: 2 marks

Question 3 (ii)

This part of the question asked candidates to give the bone type and function of the vertebrae. Once more, the classification of the bone type appeared more challenging. The functions of this classification of bone type given in the specification are protection and muscle attachment – either of these functions would gain credit. Reference to support, stability and weight bearing were not accepted.

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

One function of this type of bone is muscle attachment.



ResultsPlus
Examiner Comments

This response gains both available marks: one mark for the correct identification of the type of bone and one mark for stating one of the functions of this bone type.

Total: 2 marks

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

One function of this type of bone is to protect
3 vital organs.



ResultsPlus
Examiner Comments

This response gains one mark in total.

The first part of the response is incorrect, so receives no marks. However, one function of irregular bones is protection, so this part of the response receives a mark.

Total: 1 mark

Question 4

The focus of this question was movement analysis. Candidates were given an image of a gymnast and asked to analyse the action of the antagonistic muscle pairs at the elbow and ankle that resulted in the gymnast achieving the shape shown. Responses were only credited if they used the correct terminology, eg no credit was given for muscles bending and flexing.

In question part (i) candidates gained a mark for:

- identifying the antagonistic pair biceps and triceps
- giving the correct agonist, the triceps
- the resultant joint action at the elbow, extension

Occasionally, candidates gave conflicting statements in their response, eg that the triceps were the agonist muscle because it was relaxing. Where there were conflicting statements, a mark could not be awarded.

In question part (ii), candidates gained a mark for:

- identifying the antagonistic pair gastrocnemius and tibialis anterior
- giving the correct agonist, the gastrocnemius
- the resultant joint action at the ankle, plantar flexion.

Occasionally, candidates gave only one correct muscle from the antagonistic pair: both were required for the mark.

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)

~~After~~ At the elbow, ~~the tricep~~ the joint ~~is~~ is going through extension. So the agonist muscle is the tricep as it is contracting and the antagonist muscle is the bicep as it is relaxing.

(ii) Ankle

(3)

At the ankle the movement plantar flexion is occurring. The agonist muscle is the gastrocnemius because it is contracting and the ~~antagonist~~ antagonist muscle is the tibialis anterior as it is relaxing.



Three marks are awarded for each part of this response.

The joint action at each joint is identified correctly, as are the antagonistic muscle pairs and the agonist muscles.

Total: 6 marks



Make sure you know the correct technical language to use for movement analysis questions.

Remember:

- muscles contract and relax
- joints flex and extend

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)

The antagonistic muscle pair at the elbow is the triceps and the biceps. They allow the gymnast to perform the action by the biceps relaxing and the triceps flexing. This allows the gymnast to lock his arms straight.



ResultsPlus
Examiner Comments

This part of the response gains one mark for correct identification of the antagonistic muscle pair.

No credit is given for the arm being straight.

The correct terminology is required, ie extension at the elbow. No mark is awarded for the tricep flexing. Again, correct terminology is required, ie tricep contracts or that the tricep is the agonist.

Total: 3 marks

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

(ii) Ankle

(3)

At the ankle there is plantar flexion.
The antagonistic muscle pair working is
the gastrocnemius and tibialis anterior.
As the tibialis anterior is contracting the
gastrocnemius are relaxing.



This part of the response gains 2 marks.

The correct action at the ankle is identified, as is the antagonistic muscle pair. However, the role of each muscle to bring about the movement is incorrect.

Total: 2 marks

Question 5 (a)(b)(c)

This question focusses on muscle fibre types, their characteristics and use in sporting activity.

Candidates were supplied with a partially-completed table. They were given a characteristic of one fibre type and the use of another. Using this information, candidates needed to identify the fibre types as type IIx and type I. In addition, for type IIx they needed to provide a characteristic of the fibre type that was relevant to the given example of its use. Therefore, candidates needed to focus on its strength or speed of contraction to take off in high jump.

Some candidates referenced limited resistance to fatigue. This was not credited because it would not be a characteristic that would make it suitable for use when taking off in high jump. Neither were responses that gave characteristics of the movement. The characteristic had to concern the fibre type. For type I, candidates also had to give an example of its use in sport or physical activity. A popular correct answer was marathon running.

Use any information given to you in a question: it will be there to help guide your answer.

The example of taking off in high jump requires power because it is an explosive movement.

The most powerful muscle fibre types are type IIx.

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	fast twitch slow fibre 2x (1)	fast speed of contraction. (1)	Take off in high jump
Row B	slow twitch (1)	Most resistant to fatigue	running a cross country race (1)



ResultsPlus
Examiner Comments

This response gains all available marks.

- The fibre types are identified correctly
- A relevant characteristic of type I/x is given
- There is a suitable example for type I/slow twitch fibres

Total: 4 marks




ResultsPlus
Examiner Tip

Use the information given in the question.

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	IIa (1)	Pink Fibres (1)	Take off in high jump
Row B	 (1)	Most resistant to fatigue	Sprinting (1)



This response gains a mark for correct identification of type 1 fibres from the given characteristic.

The stated characteristic of the colour of the fibre is not credited. Even if it had stated white in colour (for type IIx) this would not be credited. Although it is a characteristic, it is too vague in relation to the context of this question, ie why this fibre type would be recruited for take off in high jump. It is not recruited due to its colour, but for its speed or force of contraction.

No mark is awarded for sprinting because type 1 fibres would not be used for this type of activity.

Total: 1 mark

Question 6

This question asked candidates to explain the importance of white blood cells and blood plasma when training for a long-distance event. Because the command word for the question was 'explain' a developed response was required, rather than three disparate points.

Many candidates identified correctly the role of white blood cells in fighting infection, continuing to say that this meant the runner would be less likely to become ill. Some developed this one stage further, explaining that if runners remained healthy or free from illness, they would be able to continue to train, avoiding reversibility. Thus, some candidates were able fully to develop their response in relation to the question context.

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)

White blood cells fight infection.
Therefore the athlete is less likely
to become ill. This means that
the athlete has less days off
and can continue training.



ResultsPlus
Examiner Comments

This part of the response gains all available marks.

The candidate:

- identifies the function of white blood cells
- gives the benefit of this
- notes the impact on training

Total: 3 marks

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 → Fight infection

(3)

White Blood cells: fight infection.

As long distance runners are working aerobically, which means they are taking oxygen. The oxygen may contain bacteria, diseases that are harmful to the body. The white blood cell is then there to kill off the bacteria/diseases.



This response gains one mark for stating the role of white blood cells in fighting infection. The link between good health and impact on subsequent training is not referenced.

Total: 1 mark

Many candidates identified the role of plasma correctly, as a transportation system for many components within the blood and other essential components for normal functioning of the body.

It was important that candidates stated *what* was being transported, not just that it was involved in transportation. For example, candidates stated plasma carried red blood cells, which in turn carried oxygen, essential for the runner in terms of aerobic energy production and reduced risk of fatigue.

As in part (i), responses needed to be developed to gain full credit. How the response was developed would differ, based on what the candidate had stated was being transported.

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.

(ii) Blood plasma

(3)

Plasma is the liquid in the blood which transports the other components. This means that red blood cells are being carried. Red blood cells transport oxygen. This therefore allows the working muscle to get energy. In a long-distance event Amari will be able to have more endurance and aerobically respire.



ResultsPlus
Examiner Comments

This response gains all available marks.

One mark is awarded for plasma being the liquid part of the blood, carrying red blood cells.

This knowledge is expanded on, making the link between red blood cells and oxygen transport.

The third mark is for the impact, allowing the performer to respire aerobically.

Total: 3 marks

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.

(ii) Blood plasma

(3)

Blood plasma transports the nutrients in the blood. Therefore the athlete doesn't fatigue. This is because glucose is constantly being supplied so the athlete can train harder for longer without fatigue.



ResultsPlus
Examiner Comments

This response gains two marks.

One role, to carry nutrients, is identified and the impact of this given, ie the runner will be able to train harder for longer without fatigue.

To gain the third mark, the response needed more detail, an expansion that helped link the role with the impact, eg how the body used the nutrients in energy production.

Total: 2 marks

Question 7 (a)(i)

Candidates were presented with an incomplete sketch of a lever system and asked to identify the class of lever from the information given in the image. Many candidates identified this correctly, as a second-class lever system.

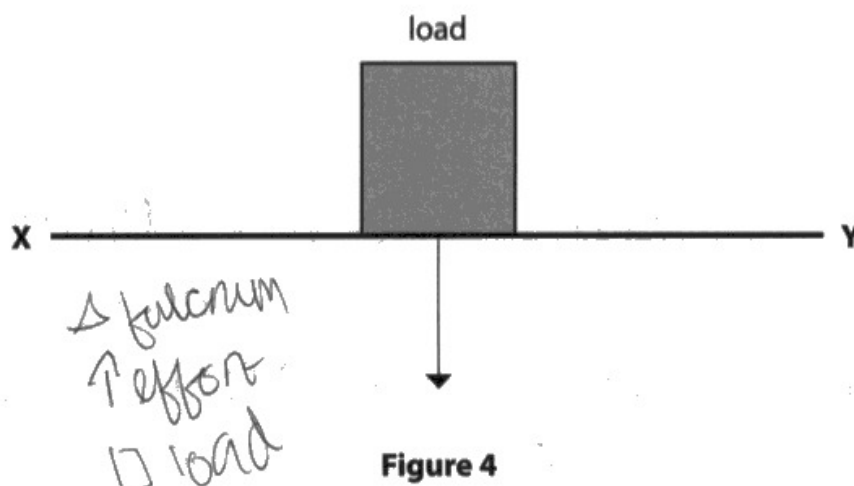
Question 7 (a)(ii)

Using the same image, candidates were asked to identify the missing parts of the lever system.

Many candidates identified correctly that the X and Y on the image represented the effort and fulcrum. Incorrect responses tended to be blank, include the load (given in the image) or refer to the lever itself.

Some candidates drew the recognised symbols for the fulcrum, but without the correct label and this could not be credited.

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



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

(2)

X fulcrum
Y effort



ResultsPlus
Examiner Comments

This response gain marks for:

- fulcrum
- effort

The missing parts of the system could be referenced in either order.

Total: 2 marks

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

E t

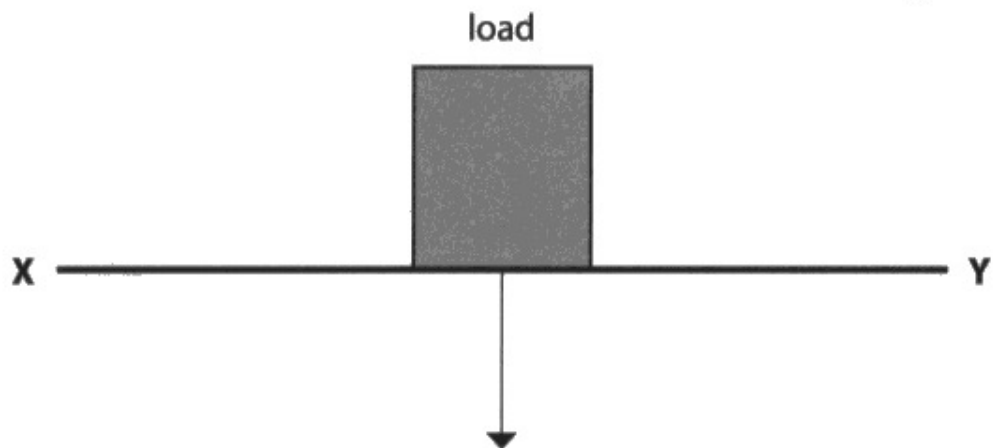


Figure 4

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

(2)

X load
Y fulcrum



ResultsPlus
Examiner Comments

This response gains 1 mark.

One mark is awarded for correct identification of the fulcrum.

No marks are awarded for load because this is given in the image.

Total: 1 mark

Question 7 (b)

In this part of the question, candidates needed to explain why the lever system in the image gives a mechanical advantage.

To gain both marks, candidates needed to reference the:

- length of the effort arm compared to the resistance or load arm
- advantage this gave, ie the lever system ensures a heavy load can be lifted with relatively little effort

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

(2)

The effort arm is longer than the load arm
so a small amount of effort is needed to lift a
heavy load.



ResultsPlus
Examiner Comments

This response gains both marks.

Reference is made to the relative lengths of the load and effort arm in this type of lever system, and the advantages this gives.

Total: 2 marks



ResultsPlus
Examiner Tip

Remember, you need to make as many points in your answer as the number of marks available.

If the command word in the question is 'explain' then these points need to be linked.

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

(2)

the second class lever has a short effort arm. This means that a large load can be lifted by a relatively small effort.



ResultsPlus
Examiner Comments

This response gains 1 mark.

Reference is only made to the effort arm and the reference to it being shorter is not accurate.

No reference is made to the length of the load arm, ie why there is a mechanical advantage.

However, the advantage to the performer is clearly stated.

Total: 1 mark

Question 7 (c)

In the final part of the question, candidates needed to give an example of the use of a second-class lever in sport or physical activity.

Most candidates did give a physical activity or example from sport but in some instances, candidates simply named a sport, eg cycling. This was not credited because it was not clear at what point the second-class lever was being used. There had to be sufficient detail within the example, eg when pushing off the floor, to intercept a ball, to head it, or at the take-off in high jump.

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

(1)

..... Taking off in a high jump



The example given is specific. Rather than only stating high jump, the point within the movement where the lever system would be used is identified clearly, ie at take-off.

Total: 1 mark

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

(1)

chest using your chest to control the ball in football.



This response does not receive any marks.

The example could not be credited because it was not clear at which point during the movement the lever system would be used. Had it been clearer that the player was on their toes to reach higher, this would have gained the mark.

Total: 0 marks



Make examples as clear as possible, so the examiner knows exactly what you mean.

Question 8 (a)(i)

This question continued the theme of the use of levers in sporting activity.

Candidates were given two images of different sporting techniques within football: the first image was of a throw-in during a game of football. They were asked to identify the lever system in use. Some candidates identified correctly the use of the first-class lever during the throw in.

Question 8 (a)(ii)

The second image was of a penalty kick in football. As in part (a) (i) of this question, candidates were asked to identify the lever system in use. Many candidates identified correctly the use of the third-class lever system operating at the knee during the penalty kick. This appeared more well-known than the first class lever acting at the elbow during the throw-in in part (i).

Question 8 (b)

This part of the question asked candidates to apply their knowledge and identify the load during the throw-in. Many candidates identified this correctly, as the football. Incorrect responses tended to be blank or did not include the ball, ie stating a body-part instead.

Without reference to the ball, no mark could be awarded.

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

(1)

the football is the load



ResultsPlus
Examiner Comments

One mark is given for the correct identification that the football was the load.

Total: 1 mark

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

(1)

the elbow



ResultsPlus
Examiner Comments

No mark can be awarded because there is no reference to the football.

Total: 0 marks

Question 10 (a)

Candidates were presented with a table of data collected during a training session. The training session was split into three parts, and data about each part of the session was provided. Candidates were asked to use this data to justify why one stage of the training was more demanding for the performer.

Candidates who used the data in the table achieved well on this question. Correct justifications focussed on the fact that the performer took 10 minutes longer to complete the same distance, therefore it must have been more challenging. Again using data from the table, candidates linked this to the fact that this part of the training was hilly, rather than flat.

Some candidates focussed solely on the fact that one part of the training was hilly, without using the other information provided.

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)

Because part 1 and 3 are both on flat terrain meaning she has to use the same and lower amount of effort consistently but in part 2 she did the same distance but it was on hilly land meaning she had to do high intensity parts of the cycle and it only took 10 more minutes to complete than the other 2.



ResultsPlus
Examiner Comments

The candidate uses the information provided, in their response. They attribute the increased demand of Section 2 to it being hilly and the evidence it was more demanding because although they covered the same distance, it took them 10 minutes longer.

Total: 3 marks

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)

It was harder for Carron in part 2 because it was up a hill so that works your muscles harder and it takes all the energy out of you. It was time consuming.



ResultsPlus
Examiner Comments

The candidate identifies the difference in terrain between the different parts of the race but does not use any further data to justify how we know part 2 is the most demanding.

Although there is reference to it being time-consuming, to gain the mark a little more detail is required, using the data from the table, ie it takes 10 minutes longer.

Total: 1 mark



Make sure you use the data provided. This will provide you with the reasons to justify your answer.

Question 10 (b)(i)

This part of the question asked candidates to identify one long-term training effect on the muscular system of the long-distance cyclist.

Muscular hypertrophy was a popular correct response for a training effect on the muscular system.

Incorrect responses tended to focus on other body systems, eg the respiratory system or cardiovascular system.

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

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

(1)

One is muscular hypertrophy



ResultsPlus
Examiner Comments

Muscular hypertrophy was a frequent correct response.

Total: 1 mark

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

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

(1)

resting heart rate decreases



ResultsPlus
Examiner Comments

No mark is awarded for this adaptation because it applies to the cardiovascular system, rather than the muscular system.

Total: 0 marks



ResultsPlus
Examiner Tip

Make sure you know the names of each of the body systems and understand of what they are comprised.

Question 10 (b)(ii)

This part of the question asked candidates to identify one long-term training effect on the skeletal system of the long-distance cyclist. Most candidate responses related to the correct body system. Increased strength of bones was a popular correct response for a training effect on the skeletal system.

Incorrect responses tended to be left blank or focus on the negatives of overtraining, ie injury.

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

(1)

Greater bone density.



Greater bone density was a frequent correct response.

Total: 1 mark

Long-term training effects are the adaptations the training causes: they will be positive outcomes.

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

(1)

Her bones may become weaker as they have been worked more and could start to lose strength.



No marks are awarded for negative impacts of exercise.

Total: 0 marks

Question 10 (c)

To answer this question, candidates needed to make a judgement and then explain their reasons for doing so.

They were asked whether the one-minute sit up test was a suitable test to measure the muscular endurance of a cyclist. They could decide yes or no: marks were awarded for the explanation.

If yes, one reason for this could be that it would tell them the muscular endurance of the core, needed in cycling to maintain correct form, or that it would give an indication of muscular endurance in other areas of the body. Most candidates did not consider this to be an appropriate test, the reasoning being it tested muscular endurance of the core and they needed to know the muscular endurance of their legs.

Incorrect responses included the test not being suitable because it measured strength. Some candidates gave incomplete responses, eg tested muscles of the core not needed in cycling, without going on to state a more suitable test or area of the body that should have been tested instead.

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)

The one-minute sit up test does ~~not~~ measure her ~~muscle~~ muscular endurance here this would only be in her abdominals and not her legs. Carron should be testing her legs muscular endurance, not her abdominals.



The response states the test does measure muscular endurance, but only in relation to the abdominals and not in the legs, and that they should measure the muscular endurance of the legs. This is sufficient to justify the potential issue with using the one-minute sit up test.

Total: 2 marks

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

(2)

one-minute-sit-up test would not be an appropriate fitness test measure as ~~the~~^{some} voluntary muscles are not ones she would need in her cycling race. For example, her abdominal muscles are not needed when she is in her race.



ResultsPlus
Examiner Comments

One mark is awarded for the test measuring muscular endurance of her abdominal muscles. To gain the second mark the response needed to explain why testing the muscular endurance of the abdominals was not appropriate for the cyclist.

Total: 1 mark

Question 11 (a)

This question asked candidates to explain one reason why a performer should measure their fitness before designing their personal exercise programme (PEP).

Several different responses were credited, and many candidates achieved both marks. Where two marks were not achieved, this was often due to a lack of development of the response, eg two separate reasons were given rather than explaining one reason.

Popular correct reasons included:

- identification of their strengths/areas for improvement
- using the data so the performer can set appropriate targets
- starting weights/intensities for the training.

The explanation had to give the value of the stated reason, eg setting appropriate starting weights so they did not injure themselves or overtrain.

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)

It will help him to understand his individual needs - like what his current fitness levels are so that he doesn't make his plan unrealistic and unachievable.



Marks are awarded for the explanation that by knowing his current level of fitness the performer will understand his individual needs and can ensure the PEP is realistic and achievable. The response gives a clear explanation for the given reason.

Total: 2 marks

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 should do this so he knows what area of fitness he's strong in and what area he's weak in



ResultsPlus
Examiner Comments

The mark is awarded for using fitness tests to identify strengths and weakness. To gain the second mark the response needed to explain why knowing strengths and weaknesses before planning a PEP is important, eg to make sure the performer works on the correct components of fitness or sets appropriate targets.

Total: 1 mark



ResultsPlus
Examiner Tip

Draw from your own experience when answering questions about the PEP: think about why you measured your fitness first.

Question 11 (b)

This part of the question asked candidates to describe how to complete the grip dynamometer test. Many candidates achieved both available marks, describing the movement of the arm and squeezing the grip as hard as possible.

There were several acceptable descriptive points. Less common but correct responses included:

- setting the dial to 0
- repeating the test 3 times
- gripping for 5 seconds

Incorrect, or partially-correct responses tended to be vague, especially regarding the arm movement or candidates forgot to mention that the grip should be squeezed hard or tightly. Other incomplete responses only gave one descriptive point.

Mark uses the grip dynamometer test to measure his strength.

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

improvement
grip dynamometer (2)
hand
- place ~~grip dynamometer~~ *hand* ~~on to~~ *hand* and make sure the starting is at zero. *line of measuring equipment*
- using one hand only, tightly squeeze ~~down~~ *down* on to the grip as hard as you possibly can and then let go. look at result



ResultsPlus
Examiner Comments

Marks are awarded for setting the equipment to 0 and for squeezing the grip as hard as possible.

Total: 2 marks



ResultsPlus
Examiner Tip

When answering a question that asks you to describe something, give as many descriptive points as the number of marks available.

Mark uses the grip dynamometer test to measure his strength.

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

(2)

you place a grip dynamometer into your dominant hand and squeeze the two handles as much as you can, then your result will be on the dynamometer.



The mark is awarded for the description of gripping the equipment as much as possible.

A second descriptive point about how to complete the test was required to gain the second mark.

Total: 1 mark



When describing how to do something, be clear about the procedure so the person reading could copy the correct method.

Question 11 (c)

This part of the question asked candidates to identify a performer's strength rating based on normative data provided. Most candidates identified correctly the rating as average.

Question 11 (d)(e)

Candidates were given the names of two fitness tests. They were asked to state the component of fitness each tested and a method of training or fitness class that could be used to develop the component of fitness being tested.

The first fitness test was the sit and reach test, testing flexibility. A popular correct response for the fitness class where this component might be developed was yoga. Incorrect suggestions for developing flexibility included plyometrics and circuit training.

The second fitness test was the Harvard step test, used to test cardiovascular endurance. Whilst this was well-known, some candidates still associated the test with muscular endurance and therefore did not gain the available mark.

Correct methods of training to improve cardiovascular endurance are continuous training and Fartlek training. Additionally, given the question context (cyclist) many candidates correctly identified spinning as an appropriate fitness class to develop this component of fitness.

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	Flexibility (1)	Yoga or pilates (1)
Harvard step test	Cardiovascular fitness Cardiovascular fitness (1)	Aerobics (1)



ResultsPlus
Examiner Comments

Both components of fitness are identified correctly.

Appropriate fitness classes to improve these components of fitness are given.

Total: 4 marks

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	flexibility (1)	pilates (1)
Harvard step test	muscular endurance (1)	continuous training (1)



One mark is awarded for flexibility and one mark for Pilates as a suitable fitness class to help improve flexibility.

Muscular endurance was not credited in association with the Harvard step test: this had to link to cardiovascular endurance. However, Fartlek training is an appropriate method of training to improve the component of fitness tested by the Harvard step test.

Total: 3 marks

Question 11 (f)

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

Body pump is a form of ~~fitness training~~ ^{weight training} ~~resistance training~~ ⁽²⁾
as Mark would have to lift weights, which develops
strength as he must overcome an increased resistance.



ResultsPlus
Examiner Comments

One mark is given for the class being a form of weight-training and one mark for the explanation that strength will develop due to overcoming an increased resistance (due to the weights).

Total: 2 marks

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

(2)

The fitness class body pump would be a good choice to increase Mark's strength because he will be working his whole body by lifting weights for numerous sets and reps



One mark is awarded for the class involving the use of weights.

To gain the second mark, an explanation is required linking the use of weights to increased resistance on the muscles, resulting in increased strength.

Total: 1 mark

Question 11 (g)(i)

The final part of Q11 asked candidates to apply two principles of training. A sketch of a circuit training session was provided, and candidates were asked to state, giving an example, how the principles of progressive overload and specificity could be applied.

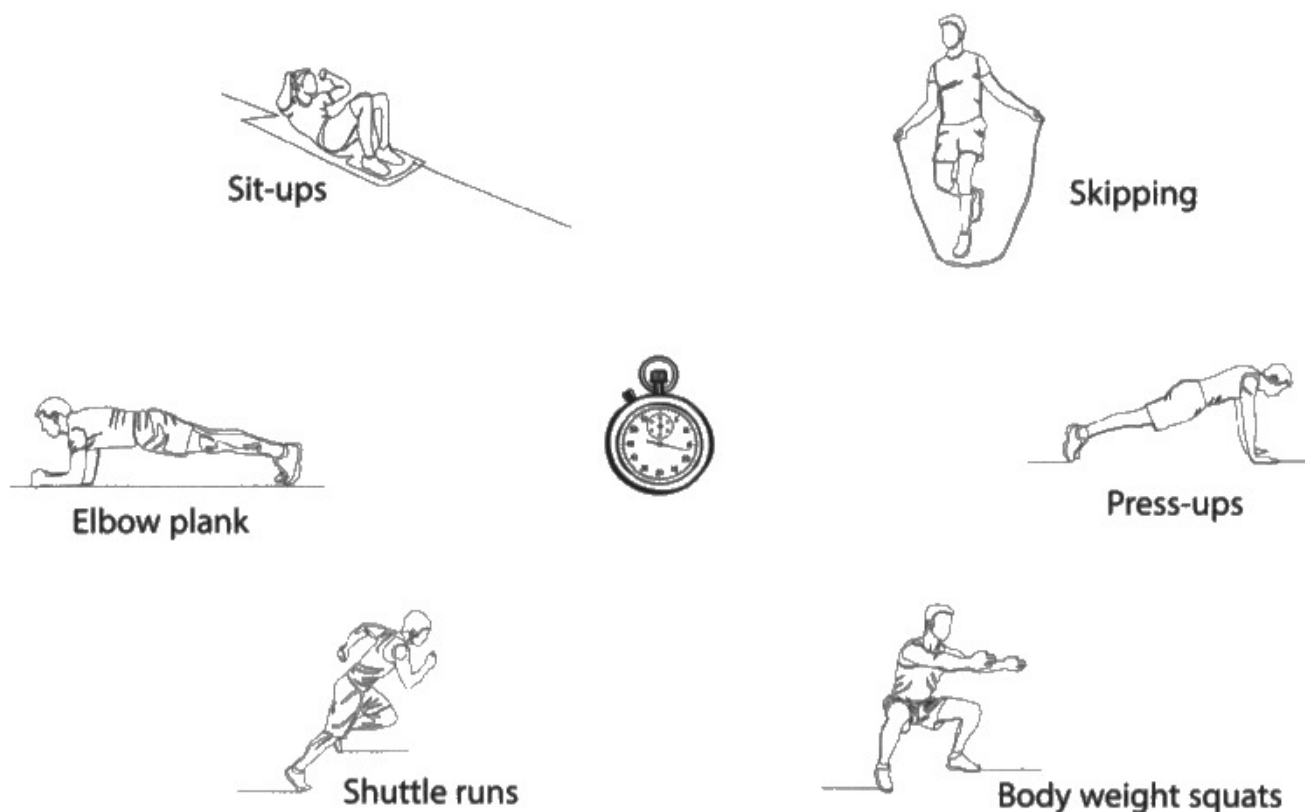
In part (i) the focus was on progressive overload.

The question asked candidates how to apply progressive overload to the sit up station, but despite this, some candidates' responses focussed on other stations within the circuit or entirely new stations. Most candidates achieved at least one mark for stating that the number of reps should be increased, or they should increase the time spent at the station.

An example was required to obtain the second mark. It is important that candidates appreciate that examples need to be specific and should not be further explanation or a description. A typical correct example for spending longer on the station was to increase the time, so a person worked for 35 seconds rather than 30 seconds.

Mark joins a circuit training class to increase his fitness.

Figure 7 shows the circuit.



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

(2)

He could increase the amount of reps on the sit up while decreasing the rest time, making the workout more difficult. An example of this is, adding 10 more reps whilst decreasing rest time by 5 seconds.



ResultsPlus
Examiner Comments

One mark is given for stating that progressive overload could be applied by increasing the number of repetitions and one mark for the example of adding 10 more reps.

Total: 2 marks

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

(2)

mark could gradually increase
the amount of sit ups he does
or the duration he does
them for.



ResultsPlus
Examiner Comments

One mark is awarded for stating how progressive overload could be increased. No specific example is given so no further marks are awarded.

Total: 1 mark



ResultsPlus
Examiner Tip

Think about the information provided. For example, there is a stop watch in the circuit image, so consider how this might help apply progressive overload.

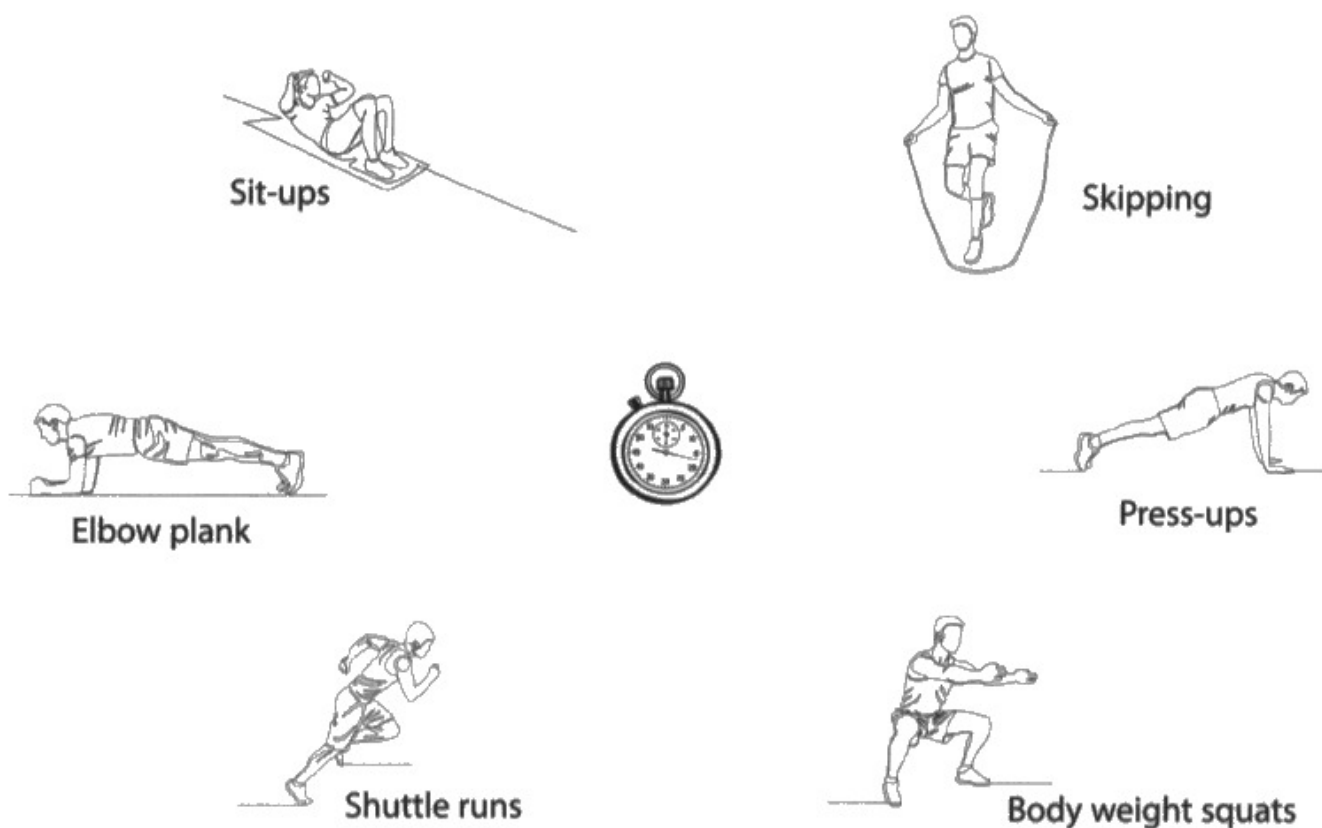
Question 11 (g)(ii)

The final part of Q11, part (g) (ii) asked candidates how to apply specificity to the provided circuit, given the aim was to increase strength. Correct responses included adding weights or including strength-only stations.

As with part (i) of the question, examples were often omitted. Many candidates did identify correctly the use of weights to help increase strength. Some candidates gave definitions of specificity rather than state how to apply it. Others stated that strength could be improved by increasing the number of reps or spending longer on a station, focussing on duration, rather than intensity.

Mark joins a circuit training class to increase his fitness.

Figure 7 shows the circuit.



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

(2)

Instead of doing body weight squats he can ~~increase~~ increase resistance and do weighted squats to increase his strength. For example ~~60 kilogram squats~~ 20 kilogram squats.



ResultsPlus
Examiner Comments

One mark is given for stating that weights could be used and one mark for the example of using 20kg weights when completing the squats.

Total: 2 marks



ResultsPlus
Examiner Tip

Note how this answer gives a specific number in the example.

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

(2)

He change some of the exercises to some more strength-related exercises.



ResultsPlus
Examiner Comments

One mark is awarded for stating that a way to apply specificity to increase strength would be to add strength-related exercises. No specific example is given.

Total: 1 mark

Question 12 (a)

This question asked candidates to state the meaning of the first aid term RICE – Rest, Ice, Compress, Elevate.

To gain the available mark all four aspects of the term needed to be stated correctly.

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)

~~rest~~ ~~injury~~ rest, ice, compress,
elevate ~~above~~ (above the level of heart)



Each letter of the acronym RICE is represented correctly.

Total: 1 mark

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)

r - rest i - ice c - control
e - elevate



If one aspect of RICE was omitted or stated incorrectly then the mark was not awarded.

In this example the response states control rather than compression.

Total: 0 marks

Question 12 (b)

This question asked candidates to give one example of an activity that could be included as part of a warm-up, to reduce the risk of a muscle strain.

A large variety of examples was accepted, provided they were clearly low-intensity or a form of stretching, eg jogging or lunges.

High-intensity examples, or examples where the intensity was unclear, were not credited, eg jumping jacks or skipping.

- (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)

~~jumping jacks~~ stretches eg lunges



ResultsPlus
Examiner Comments

This is a suitable example of an activity that could be included within a warm-up, to reduce the risk of injury.

Total: 1 mark

(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)

~~Doing a ha~~ Doing a light warm up means the muscles are warmer and have more elasticity, less likely to strain.



To gain the mark a specific example was required, rather than a general statement about why injury may be reduced.

Total: 0 marks



Read the question carefully. This question is asking for an example, not the importance, of a warm-up.

Question 12 (c)

This question asked candidates to explain one performance-enhancing drug to which performers may resort, if injured, so they could continue to perform.

The required response was narcotic analgesics, the reasoning being that they masked the pain allowing the performer to continue. Recurring, incorrect responses referenced by candidates were beta blockers, stimulants, and Erythropoetin (EPO).

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)

Narcotic analgesics stops the performer feeling pain. This is a serious painkiller allowing them to carry on performing.



One mark is given for identifying the type of drug that would be taken and one mark for why it would be chosen.

Total: 2 marks

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)

One type of ~~PEA~~ PED someone would take if injured are anabolic steroids. This is because ~~mask~~ they mask pain so they can continue to perform.



Although not the intended response, steroids were credited as a possible drug a performer may take prior to a competition but not due to any link to masking of pain. If stated, the explanation needed to link to a reduction in swelling or inflammation of the injury.

Total: 1 mark

Question 12 (d)

This part of the question asked candidates to identify the type of performance-enhancing drug used to mask the presence of other drugs. Many candidates correctly identified diuretics as the type of drug. Where a zero mark was awarded, this tended to be due to no attempted response or the drug stated as beta blockers.

Question 13

This essay question asked candidates to evaluate three different ways, apart from warming up, a team could continue to train and play football but remain injury-free so they could compete in a regional final in three weeks. Key information provided in the question was that they needed to continue to play and train and that the final was only three weeks away.

This question assesses the specification content on optimisation of training and injury prevention, part of Topic 3.

Based on the specification content, candidate responses needed to focus on the correct application of the principles of training, specifically those that addressed:

- training safely
- following the rules of the activity
- wearing the correct clothing/footwear
- checking the facilities

Candidates unfamiliar with this content often gave very general responses, referring to diet and long-term training effects. These topics were not credited due to the specific question context.

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

Wearing the correct clothing and the checking of facilities were discussed frequently. Examples of the correct application of relevant principles were also given (AO2), as were examples of shin pads, studded boots and preventing illegal tackles.

Where responses remained in Level 2, this tended to be due to a lack of AO3 content, ie the evaluative, impact statements. An example is that although shin pads might have been mentioned to prevent being kicked in the leg, the impact of not doing so was often omitted. Responses needed to reference specific significant injuries that might happen without shin pads, that would not repair in the three remaining weeks until the final.

To achieve well on these types of questions it was essential that relevant facts were stated, applied and then evaluated. In the context of this question, a relevant fact could be to check the facilities before training/playing, (AO1), looking for hazards such as holes in the pitch or broken glass (AO2). If the ground were uneven, a player could sprain an ankle and would need six weeks recovery time and therefore be out of the team for the final (AO3).

Overall, candidates presented well-structured responses.

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)

The team can reduce the risk of injury by checking the facilities before playing, wearing protective clothing^{/equipment}, and adhering to the rules of the game (not playing too hard).

Checking the facilities is beneficial to reducing the risk of injury - checks can be conducted on the grass of the field^{/pitch} to ensure that it is even ~~and~~, the ~~players are unable to trip~~, not wet/slippy/covered in ice, reducing the chance of the player's tripping/slipping and an injury ~~to happen~~ ^{occurring} (ie a broken bone, a movement past the ~~pe~~ athlete's range of motion occurs resulting in a soft tissue injury/spain) during weight training sessions, ensure that there is ~~enough~~ enough space to conduct the movement, the weights are in the correct place) to ~~ensure~~ prevent the player from injuring themselves or others around them by accidentally dropping a weight on their teammates foot or them tripping over the weights. First aid kits must also be up-to-date as do fire evacuation procedures.

~~Protective clothing~~

Protective clothing/equipment ~~can~~ is also advantageous in reducing the risk of injury. Head gear can be worn by the ~~players~~ players to protect the ~~cranium~~ ^(reduce impact) ~~bra~~ to offer extra protection to the brain during headers/collisions reducing the risk of a concussion ~~when~~ wearing

shin pads and knee long socks. ~~are~~ ~~benefit~~ help ~~reduce~~ protect the ~~players~~ players' legs during tackles, reducing the risk of studs ~~damaging~~ causing injuries (i.e. ~~broken~~ fractures, ~~tear~~ torn ligaments and tendons (i.e. cruciate ligament injuries which is common amongst footballers)). ~~Perhaps~~ ^{They} The players should also wear the correct footwear (football boots) to reducing the risk of ankle rolls and other injuries caused by the incorrect footwear. - perhaps they should avoid studs over the three weeks to reduce the risk of hurting their teammates.

Adherence to rules is also important in reducing the risk of injury. If players do not play violently and recklessly! ^{/with aggression} ~~being their~~ i.e. not going for unnecessary tackles, timing the tackle right, watching their movements ~~and~~ ~~not trying~~ they avoid causing serious injury to their fellow teammates (i.e. a fractured bone due to a poorly timed tackle, a dislocated shoulder due to pushing and shoving, a concussion due to head collision) - they are not only protecting themselves but the entire team too.

Overall, all three ways are advantageous ~~to~~ to reducing the risk of injury. The most important are the protective clothing and the adherence to the rules as they can be conducted by the players themselves.



This response was placed in Level 3, addressing all three of the required assessment objectives.

It is well-structured, giving several ways to prevent injury whilst still allowing the players to train and play. This knowledge is applied to the question context and then the impact on the player is discussed. Eg, a way to reduce injury is to wear protective clothing.

Although use of head gear is limited in football, other examples of protective clothing are also given, such as shin pads to protect the legs when being tackled, resulting in fewer injuries from studs, or wearing football boots to reduce the risk of turning an ankle. Several of the specific injuries stated would result in the player being dropped from the team.

Overall, this response demonstrates accurate knowledge and understanding of the relevant specification topic. It applies this knowledge to the question context. The points raised provide evidence to support the claims about the value of each different measure.

Total: 9 marks



Remember to apply any knowledge you have to the question context.

Give examples that relate to the question, not another sport or different situation.

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)

The main factor ~~that~~ that has come up is warming up so the team can reduce the risk of injury to play the game.

One way the team can reduce the risk of injury is wearing & protective and suitable clothing to play the game because if they are not wearing protective clothing like shin pads or the correct football boots they could be brutally injured. For example if the player is not wearing shin pads and they are running for the ball they could get kicked in the leg or slide tackled to the ground.

A second way the football team can reduce the risk of injury is by looking around on the ground to see if there is any sharp objects ~~or~~ that could injure them in anyway.

If they don't check for any sharp objects they could get knocked over by a player from their team or the opposite team and the object could stick ~~in~~ into any part of their body.

Finally, the football team could do a para questionnaire to see if everyone is fit to play in the final game because they would know who is injured and if they are fit to play the game.



This response achieves Level 2.

The response demonstrates mostly accurate knowledge and understanding of the specification topic being assessed. For example, it references the importance of wearing protective clothing and checking of facilities, prior to play.

In both instances, knowledge is then applied to the question context through relevant examples – of shin pads to protect from sliding tackles, or looking for sharp objects that could stick into players if they fall over during play.

The final suggestion of a Physical Activity Readiness Questionnaire (PARQ), whilst relevant at the start of a season or if starting a different level of intensity or type of training, is less relevant here because the question context is during the season.

There are also attempts at concluding points but these tend to be vague, focussing on general references to injury, rather than something specific that may cause the player to miss the match.

Total: 5 marks

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)

One way would be to wear protective equipment such as shin pads so that you do not get a stud to the shin.

Another way is stretching out the muscles so that you do not strain any of the or pull any of your muscles whilst playing.

One final way is sportsmanship, so that you do not start or get into any fights and so that you respect anyone on the football field.



This response achieves Level 1.

The response demonstrates isolated elements of knowledge linked to the required area of the specification. There is an attempt to apply this knowledge to the question context, ie the reference to wearing protective equipment such as shin pads.

Reference is also made to sportsmanship and whilst relevant content from Component 2 of this qualification could be credited, the focus needs to be more on the use of rules (to match content from this specification) rather than the focus on respect of other players.

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, eg muscles contract and relax rather than flex and extend (Q04)
- If asked for examples make them clear, eg 'take off in high jump' rather than just 'high jump' (Q07(c))
- Use the command words and number of marks available to help you decide the depth required in your response, eg 'state' questions do not need descriptions or explanations (Q10(bi))
- Make sure you use any additional information given to you in the question, it is there to help (Q10a, Q11g)
- If asked for examples do not give descriptions (Q11g)

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>

