Rewarding Learning

General Certificate of Secondary Education
2019

Physical Education

Paper 2

Developing Performance

[G9772]

FRIDAY 17 MAY, AFTERNOON

MARK SCHEME

General Marking Instructions

Introduction

Mark schemes are intended to ensure that the GCSE examinations are marked consistently and fairly. The mark schemes provide markers with an indication of the nature and range of candidates' responses likely to be worthy of credit. They also set out the criteria which they should apply in allocating marks to candidates' responses.

Assessment objectives

Below are the assessment objectives for Physical Education which are assessed in examination paper 1 and paper 2.

Candidates must:

AO1 be able to recall knowledge and demonstrate understanding of the concepts, facts, terminology, principles and methods relating to the subject content;

AO2 be able to apply effectively the concepts, facts, terminology, principles and methods relating to the subject content ;

AO3 be able to analyse, interpret and evaluate information and data relating to the subject content.

Quality of candidates' responses

In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity which may reasonably be expected of a 16-year-old which is the age at which the majority of candidates sit their GCSE examinations.

Flexibility in marking

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If an answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

Positive marking

Examiners are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range for any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 16-year-old GCSE candidate.

Awarding zero marks

Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate.

Marking Calculations

In marking answers involving calculations, examiners should apply the 'own figure rule' so that candidates are not penalised more than once for a computational error.

Types of mark schemes

Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication. Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

Levels of response

Tasks and questions requiring candidates to respond in extended writing are marked in terms of levels of response. In deciding which level of response to award, examiners should look for the 'best fit' bearing in mind that weakness in one area may be compensated for by strength in another. In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement. The following guidance is provided to assist examiners.

Threshold performance: Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.

Intermediate performance: Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.

High performance: Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

Quality of written communication
Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication.

For conciseness, quality of written communication is distinguished within levels of response as follows:

Level 1: Quality of written communication is basic.
Level 2: Quality of written communication is good.
Level 3: Quality of written communication is excellent.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below:

Level 1 (Basic): The candidate makes only a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 (Good): The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is some use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning clear.

Level 3 (Excellent): The candidate successfully selects and uses the most appropriate form and style of writing. Relevant material is organised with a high degree of clarity and coherence. There is widespread and accurate use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a sufficiently high standard to make meaning clear.

		AVAILABLE MARKS
1	A Year 10 student wins the discus but does not perform well in the 800 m heat. The student is upset as they thought they were fit. Identify and explain the concept to help the student understand the difference in performances on Sports Day. Physical fitness is a relative concept. You can be fit for one task yet not be fit for another. For example, the student may have been fit to win gold in the discus, as it requires power and strength but be unfit to run the 800 m race because the event requires mostly aerobic and muscular endurance. Award **[0]** for an answer not worthy of credit. Award **[1]** for identifying physical fitness as a relative concept or a moderate understanding of physical fitness being relative to a specific task. e.g. Physical fitness is a relative concept; or you can be fit for one sporting event yet not fit for another. Award **[2]** for identifying physical fitness as a relative concept and a highly competent understanding of the concept in relation to components of fitness for specific physical activity/sport tasks. e.g. Physical fitness is a relative concept. The student may have been fit to win gold in the discus, as it requires power and strength but be unfit to run the 800 m race because the event requires mostly aerobic and muscular endurance. [2]	2
2	Explain why the exercise baseline is different for a person exercising to become **'fit for health'** compared to **'fit for performance'** in a specific sporting event. A person who wants to develop physical fitness for health performs a baseline of appropriate and sufficient exercise or physical activity to keep the body in reasonable working order. However, a person who wants to develop physical fitness for performance performs a higher baseline of regular and appropriate exercise so that the body is in the best shape possible to perform the physical requirements of the sport event as efficiently or effectively as possible. Award **[0]** for an answer not worthy of credit. Award **[1]** for clearly explaining physical fitness for health involves a **baseline** of appropriate and sufficient exercise to keep **the body in reasonable working order**. Award **[1]** for clearly explaining for physical fitness for performance the person performs **a higher baseline** of regular and appropriate exercise so that the **body is in the best shape possible to perform the physical requirements of the sport as efficiently or effectively as possible**. (2 × [1]) [2]	2
3	Explain what determines a person's aerobic energy production potential. A person's potential aerobic energy production is determined by the ability of the respiratory and circulatory systems delivering nutrients and O_2 to the working muscles and the ability of the working muscles to use the supply. Award **[0]** for an answer not worthy of credit. Award **[1]** for a competent understanding of what determines a person's potential aerobic energy production. e.g. A person's potential aerobic energy production is determined by the ability of the respiratory and circulatory systems delivering nutrients and O_2 to the working muscles.	

			AVAILABLE MARKS
	Award **[2]** for a highly competent understanding of what determines a person's potential aerobic energy production. e.g. A person's potential aerobic energy production is determined by the ability of the respiratory and circulatory systems delivering nutrients and O_2 to the working muscles and the ability of the working muscles to use the supply.	[2]	2
4	**(a)** Identify an athletic event that would require anaerobic fitness. *Example answers:* 100 m sprint Long jump Discus Hammer Award **[0]** for an answer not worthy of credit. Award **[1]** for an acceptable athletic event that requires anaerobic energy production.	[1]	
	(b) Explain why developing anaerobic fitness would be important for this athletic event. The athletic event is performed at a high intensity; at maximum effort; without the use of oxygen for a short period of time. Award **[0]** for an answer not worthy of credit. Award **[1]** for a basic understanding of how anaerobic energy production allows an athlete to perform. Award **[2]** for a clear and highly competent understanding of how anaerobic energy production allows an athlete to perform.	[2]	3
5	Identify a team sport and explain different situations where the following three components of physical fitness would be used. *Example answers:* Muscular speed • Beating an opponent to a 50/50 ball • To lose a defender • To support an attack/to chase back and close down an attack • Playing a shot in racket or stroke games which requires moderate force at high speed Accept a situation that clearly demonstrates the muscles having to contract and relax quickly. Muscular endurance • Towards the end of a match still being able to tackle • Play 70 minutes of a game without muscles tiring • Still getting into correct position in e.g. third set in tennis • Making repeated runs to support attacks Accept a situation that clearly demonstrates the muscles having to work for extended periods of time without tiring. Muscular strength • Hitting/striking a ball hard • Holding off a tackle • Making a tackle • Increasing distance between you and opposition • Maintaining a push in a scrum		

			AVAILABLE MARKS
		Accept a situation that clearly demonstrates the muscles working at near maximum force over a short period of time. Award **[0]** for an answer not worthy of credit. Award **[1]** for a clear example of the physical requirements of components of a specific sport. (3 × [1]) [3] **NB** Do not credit any repeated situation/technique. Answers must be specific to the team sport identified.	3
6	**(a)**	Explain the difference between static and dynamic flexibility training? Static flexibility training involves slowly stretching the muscle until mild tension is felt then holding the stretched position for a period of time. Dynamic flexibility training involves bouncing, or swinging body parts in order to put the muscle in a stretched position and produce greater muscle length. Award **[0]** for an answer not worthy of credit. Award **[1]** for a clear understanding of how static flexibility training is performed. Award **[1]** for a clear understanding of how dynamic flexibility training is performed. (2 × [1]) [2]	
	(b)	Explain how an increase in flexibility may allow a sportsperson to improve performance in **two** different physical activities. Example answers: • Swimming: a breast stroke swimmer will have a longer reach; a freestyler will have a longer pull – improve performance by going faster/ more efficiently. • Athletics: runner may increase their stride length – improve performance by going faster/more efficiently. • Gymnastics: a gymnast can perform a difficult move with greater ease – awarded more marks/increase difficulty of routine • Games player: improved reach – catch a ball/pick a ball up with greater ease Award **[0]** for an answer not worthy of credit. Award **[1]** for identifying an area of a specific sport being improved by developing flexibility Award **[1]** for explaining how increased flexibility may allow a sportsperson to improve performance. (4 × [1]) [4]	6
7	**(a)**	Explain what continuous steady pace training involves. CSP involves the athlete working continuously at a steady rate. Once the **HR reaches an appropriate intensity**, e.g. 70% MHR it is **maintained at this intensity for a period of time**, e.g. 30 minutes. The athlete has **no rest/recovery periods** in the training sessions. Award **[0]** for an answer not worthy of credit. Award **[1]** for a moderate understanding of the training method. Award **[2]** for a competent understanding of the training method. Award **[3]** for a highly competent understanding of the training method and appropriate examples of intensity and times. [3]	

			AVAILABLE MARKS
(b)	State **two** reasons why this would be an effective method of training for a long distance runner. *Example answers:* • It is specific to long distance running • Improves cardiovascular and respiratory systems/capacity of the heart and lungs/reduces resting heart rate/increases heart efficiency • Prevents lactic acid build up. • Delays the onset of muscle fatigue. • Improves fitness/aerobic endurance/you can keep going for longer. Award **[0]** for an answer not worthy of credit. Award **[1]** for a clear understanding of the effectiveness of the training method to develop physical fitness. (2 × [1])	[2]	5

8	**(a)**	Explain what circuit training involves. Circuit training involves **completing a series of different exercises/ stations**; to **work the major muscles** used in the sport/all major muscle groups for physical fitness for health; working on each exercise **for a specified amount of time/repetitions**; with **periods of rest between stations**. Award **[0]** for an answer not worthy of credit. Award **[1]** for a basic understanding of the training method. Award **[2]** for a moderate understanding of the training method. Award **[3]** for a competent understanding of the training method. Award **[4]** for a highly competent understanding of the training method	[4]	
	(b)	**(i)** Create a circuit training workout with nine stations to help a group of people develop aerobic and muscular endurance fitness. Award **[0]** for an answer not worthy of credit. Award **[1]** for a moderate understanding of how to plan a circuit training session. e.g. Including exercises that cover the major muscles of the body. Award **[2]** for a competent understanding of how to plan a circuit training session. e.g. including a variety of appropriate exercises that cover the major muscles of the body which will effectively develop muscular endurance and aerobic endurance. Award **[3]** for a highly competent understanding of how to plan a circuit training session. e.g. including a variety of appropriate exercises that cover the major muscles of the body in rotation which will effectively develop muscular endurance and aerobic endurance.	[3]	
		(ii) Justify the order of the exercises for the participants to complete. The order of the exercises are in **rotation** of **upper** body, **core** and **lower** body. The principle is to allow the muscles of one area, e.g. core, **to recover** before they are worked again/prevent fatigue. Award **[0]** for an answer not worthy of credit. Award **[1]** for a moderate understanding of the principles underlying planning the order of exercises to be included in a circuit training workout.		

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Award **[2]** for a clear and competent understanding of the principles underlying planning the order of exercises to be included in a circuit training workout.
Award **[3]** for a clear and highly competent understanding of the principles underlying planning the order of exercises to be included in a circuit training workout. [3]

(iii) Complete **Table 1** by stating a specific (do not use ranges) suitable work time and recovery period for your circuit training workout.

Table 1

Work time	30 seconds – 2 minutes
Recovery	5 seconds – 2 minutes 1:1 ratio or less

Award **[0]** for an answer not worthy of credit.
Award **[1]** for an appropriate and sound work or recovery time.
(2 × [1]) [2]
NB times must be specific, do not credit a time range.

(iv) Justify the principles underlying your choice of work and recovery times.

The circuit training workout is to develop physical fitness for health. The main fitness components to be developed will be aerobic fitness and muscular endurance. The **exercises will be completed at a moderate to high intensity – 80–90% MHR** with a work time at each station between **30 seconds to 2 minutes** to develop aerobic fitness. In this case the **recovery period should be no more than, and preferably less than, the period of high intensity work**.
Award **[0]** for an answer not worthy of credit.
Award **[1]** for a moderate understanding of the principles underlying the effective intensity/time/recovery of a circuit training workout to develop aerobic fitness and muscular endurance.
Award **[2]** for a clear and competent understanding of the principles underlying the effective intensity, time and recovery of a circuit training workout to develop aerobic fitness and muscular endurance.
Award **[3]** for a clear and highly competent understanding of the principles underlying the effective intensity, time and recovery of a circuit training workout to develop aerobic fitness and muscular endurance through the use of examples. [3]

(v) To ensure the participants' level of fitness improves, identify **three** specific things that could be adjusted in the circuit training workout to allow progressive overload.
Example answers:
- Increase the number of exercises in the circuit
- Increase the work time for each exercise
- Decrease the recovery time between each exercise
- Decrease the recovery time between each circuit
- Increase the number of circuits completed

Award **[0]** for an answer not worthy of credit.
Award **[1]** for a clear and competent understanding of the variables that could be adapted to allow progressive overload.
(3 × [1]) [3]

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(vi) One of the participants in addition to the circuit training session completes weights programme. Plan a **specific** (do not use ranges) and suitable **Week 1** weight training programme for the person by completing **Table 2**.

Table 2

Example answer:

Repetition Maximum	25 RM
Repetitions	23 reps
Sets	1 set

Award **[0]** for an answer not worthy of credit.
Award **[1]** for an appropriate and sound application of the use of isotonic weight training to develop muscular endurance for the first phase of the training programme.
(3 × [1]) [3]
NB Do not accept ranges e.g. 13-25RM. However, a range of three repetitions to repetition maximum will be accepted, e.g. if the weight planned is specifically 20RM acceptable repetitions could be 18, 19 or 20.

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9 There are various factors which underpin fair assessment when fitness testing.

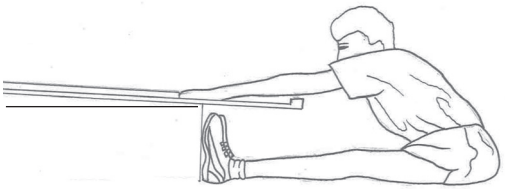
Study **Fig. 1** and **Fig. 2** below which show an athlete undertaking a flexibility test before and then after a training programme.

Fig. 1

Flexibility test **before** training programme

Fig. 2

Flexibility test **after** training programme



Refer specifically to **Fig. 1** and **Fig. 2** to evaluate the various factors that must be considered when conducting flexibility tests before and after a training programme.

Specificity:
- Both of the fitness tests in Fig. 1 and Fig. 2 are specific to testing the athlete's flexibility.

Validity:
- Both of the fitness tests in Fig. 1 and Fig. 2 are a valid measure of the athlete's lower back and hamstring flexibility. But both of the tests in Figure 1 and Figure 2 are not a valid measure of the athlete's overall flexibility.

Protocol:
- For a fair comparison the protocol for each of the tests must be followed strictly. This is not the case for the athlete as the protocol was not followed

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strictly in the same manner before and after the training programme. In Fig.1 the athlete's legs are being held whereas in Fig. 2 the legs are not held. The athlete, therefore, after the training programme when being tested could bend their knees and gain a higher score. Therefore, the results will not provide a fair comparison.

- In Fig. 1 the athlete has removed their trainers whereas in Fig. 2 they have not. Therefore, the athlete before the training programme was closer to the sit and reach box given an unfair advantage. The results will therefore not provide a fair comparison.

Accuracy of measurement:

- In Fig. 1 there is an assistant to accurately measure the athlete's score and ensure the protocol is being followed. However, in Fig. 2 the athlete is measuring the score themselves so it may not be as accurate. Therefore, the results will not provide a fair comparison.
- The sit and reach box being used in the tests have different reach distances from the athlete. Fig. 2 has a much longer overhang. Therefore, the results will not provide a fair comparison.

Award **[0]** for an answer not worthy of credit.

Level 1 ([1]–[2])
Overall impression – basic
Basic to moderate understanding of appropriately applying the factors that underpin fair assessments.
The quality of written communication is basic. The candidate makes only a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 ([3]–[4])
Overall impression – good
Moderate to competent understanding of appropriately applying the factors that underpin fair assessments.
The quality of written communication is good. The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is some use of specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning clear.

Level 3 ([5]–[6])
Overall impression – excellent
A highly competent and detailed understanding of appropriately applying the factors that underpin fair assessments.
The quality of written communication is excellent. The candidate successfully selects and uses the most appropriate form and style of writing. Relevant material is organised with a high degree of clarity and coherence. There is widespread and accurate use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently are of a sufficiently high standard to make meaning clear. [6] 6

NB Do not credit factors which underpin fair assessments that are not specific to Fig. 1 and Fig. 2.

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10 The week before GCSE PE moderation, the teacher conducts a final assessment of the students' fitness levels. **Table 3** outlines the students' scores.

Table 3

Test	Student A	Student B
Multi-stage fitness test	Level 10 Lap 3	Level 7 Lap 5
1 minute press-up test	50	36
1 minute sit-up test	38	31
Sit and reach test	24 cms	28 cms

On the day of moderation the students remained in good physical health and free from injury. The two students performed the fitness tests under exactly the same conditions. **Table 4** outlines the students' scores.

Table 4

Test	Student A	Student B
Multi-stage fitness test	Level 11 Lap 8	Level 6 Lap 5
1 minute press-up test	58	29
1 minute sit-up test	46	21
Sit and reach test	27 cms	23 cms

Compare the students' results in **Table 3** and **Table 4**.

(a) Explain what could account for Student A's scores on the day of moderation.

Example answers:
Student A may have been more motivated/excited to do well on the day of moderation. This positively affected the student's performance enabling the student to score higher in the fitness tests.
This could have been:
- because of the importance of the day for GCSE PE results.
- due to the presence of someone they deem important, i.e. moderator.
- as this is the pinnacle of nearly a year and a half of the GCSE PE course.

Award **[0]** for an answer not worthy of credit.
Award **[1]** for identifying an appropriate and correct factor that affects performance in fitness tests.
Award **[2]** for identifying an appropriate and correct factor and demonstrating a clear and competent understanding of how this positively affects performance in fitness testing. [2]

(b) Explain what could account for Student B's scores on the day of moderation.

Example answers:
Student B may have been nervous on the day of moderation. This negatively affected the student's performance, thus scoring lower in the fitness tests.
This could have been:
- because the student's nerves could have affected the amount of sleep the student got the night before moderation effecting energy levels on the day of moderation.
- because the coordinated movement required for the fitness tests was more difficult as the student's body was tense.

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		• because the student's nerves affected their confidence in performing the fitness tests. • because the student was thinking negatively that they were going to fail. • because the nerves affected the student's emotional state. Award **[0]** for an answer not worthy of credit. Award **[1]** for identifying an appropriate and correct factor that affects performance in fitness tests. Award **[2]** for identifying an appropriate and correct factor and demonstrating a clear and competent understanding of how this negatively affects performance in fitness testing. [2]	4
11	**(a)**	Skill can be classified by using a closed to open continuum. Identify and explain the classification of a free throw in basketball using this continuum. A free throw in basketball is a **closed** skill. *Example answers:* When performing a free throw there are few factors outside the control of the performer. The free throw is unaffected by the environment as it is performed indoors, same distance from the net and using the same equipment. The free throw has a set technique so it can always be executed in the same way. The free throw is unchallenged so the individual can execute the skill at their own pace. Award **[0]** for an answer not worthy of credit. Award **[1]** for correctly identifying the classification of the skill as closed. Award **[2]** for correctly identifying the classification of the skill as closed and demonstrating a competent understanding of closed skills. Award **[3]** for correctly identifying the classification of the skill as closed and demonstrating a highly competent understanding of closed skills. [3]	
	(b)	Identify and explain the classification of a pass in a competitive football game using this continuum. A pass in a competitive football game is an **open** skill. *Example answers:* When performing a pass in a competitive football game there are many factors outside the control of the performer. The pass is affected by the environment as it is constantly changing and so movements have to be continually adapted. The pass may be challenged by opposing players so the individual may have to execute the skill under pressure. The pass may be affected by where the player is in regards to other team mates. Award **[0]** for an answer not worthy of credit. Award **[1]** for correctly identifying the classification of the skill as open. Award **[2]** for correctly identifying the classification of the skill as open and demonstrating a competent understanding of factors that classify a skill as open. Award **[3]** for correctly identifying the classification of the skill as open and demonstrating a highly competent understanding of factors that classify a skill as open. [3]	6

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12 **Table 5** presents examples of different types of skills.

Use the terms below to complete **Table 5**.

Table 5

Example	Type of skill
Striking a ball	**Motor skill**
Reading coaching points on how to strike a ball	**Cognitive skill**
Looking where the goal keeper is before deciding where to aim the ball	**Perceptual skill**

Award **[0]** for an answer not worthy of credit.
Award **[1]** for correctly identifying the type of skill.
(3 × [1]) [3] 3

13 Agility is a factor that underpins skilled performances.

(a) What is agility?

Agility is the ability to change position/direction efficiently and effectively when moving at speed.

Award **[0]** for an answer not worthy of credit.
Award **[1]** for a clear explanation of agility. [1]

(b) Explain the importance of agility for the following two sports.

Example answers:
- Agility is required to allow quick changes in direction after completing one shot to play the next e.g. from a net shot to a baseline backhand.
- Good agility will allow the tennis player to effectively cover the court and return shots.
- Agility is required for a winger to quickly get behind a defender on the fly.
- Agility in football allows a defender to quickly turn when the offensive player switches directions to stay close to them.
- A goalkeeper will have to quickly switch directions while the ball is moving around the box in order to keep the ball out of the net.

Award **[0]** for an answer not worthy of credit.
Award **[1]** for a clear and competent understanding of the importance of agility for a tennis player.
e.g. Agility is required to allow quick changes in direction to cover the court and allow the player after completing one shot to play the next to keep returning shots.
Award **[1]** for a clear and competent understanding of the importance of agility for a footballer. [2] 3
(2 × [1])

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14 Study **Figure 3** which shows the relationship between the level of arousal and performance for two athletes. Answer the questions that follow.

(a) Evaluate the performance and arousal levels of the boxer and the golfer in **Fig. 3**.

There is an **optimum zone** of arousal for a sports person to perform at their best with different sports requiring different levels of arousal.
The golfer benefits from lower levels of arousal compared to the boxer, the optimum zone being between low to moderate. This is because the golfer must maintain control and rhythm e.g. when putting because it is a precise skill.
Whereas, the boxer benefits from higher levels of arousal compared to the golfer/optimum zone being moderate to high. This is because of the gross body movement of punching requiring strength and speed.

Award **[0]** for an answer not worthy of credit.
Award **[1]** for a moderate understanding of how levels of arousal affect performance in different sports.
Award **[2]** for a competent understanding of how levels of arousal affect performance in different sports.
Award **[3]** for a highly competent understanding of how levels of arousal affect performance in different sports. [3]

(b) Explain the effect on performance if, during the fight, the boxer's arousal levels became too high.

Example answers:
If during the fight the boxer's arousal levels became too high:
- This could negatively affect performance
- This could lead to the athlete becoming anxious/worried/stressed
- The boxer may lose concentration
- The boxer may over react/lose control of behaviour/not listen to referee
- Poor decision making

Award **[0]** for an answer not worthy of credit.
Award **[1]** for clearly identifying that the athlete's performance would be negatively affected.
Award **[1]** for clearly understanding how performance will be negatively affected by giving an example.
(2 × [1]) [2]

(c) For the duration of the 18 holes the golfer's arousal levels were consistently too low. Explain how this could affect performance.

Example answers:
If during the 18 holes the golfer's arousal levels were consistently low:
- This could negatively affect performance
- The golfer may become bored/disinterested/not try/hit poor driving shots
- The golfer may become unmotivated
- The golfer may lose concentration/miss easy putts

Award **[0]** for an answer not worthy of credit.
Award **[1]** for clearly identifying that the athlete's performance would be negatively affected.
Award **[1]** for clearly understanding how performance will be negatively affected by giving an example.
(2 × [1]) [2]

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15 Periodisation is the organised division of training into phases.

(a) Identify and explain the focus of the following two phases of periodisation.

Phase 1 – Off-season

Example answers:
- This is the transition period
- Focus is on rest/recovery
- Athlete should engage in active rest, i.e. low intensity aerobic exercise

Phase 2 – Pre-season

Example answers:
- This is the preparation period
- Major emphasis will be on improving general fitness
- Skills-related training becomes important

Award **[0]** for an answer not worthy of credit.
Award **[1]** for a basic understanding of the specific phase of periodisation.
Award **[2]** for a moderate understanding of the specific phase of periodisation.
Award **[3]** for a competent understanding of the specific phase of periodisation.
(2 × [3]) [6]

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(b) **Table 6** shows a typical week of an **in-season** football training programme. Each training session began with a 10 minute warm up.

Table 6 – In-season

	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Intensity	Hard	Moderate	Rest	Moderate	Rest		Rest
Content of session	15 min anaerobic runs e.g. shuttle runs/ pyramid runs Intensity: 90% + MHR 25 min drill work e.g. pass and move, run and shoot at angles Intensity: 80% MHR 20 min conditioned game Intensity: 80% MHR	15 min fast feet drills Intensity: 80% MHR 10 min speed, agility and quickness drills over 10m Intensity: 90% + MHR 15 min individual skill and ball work		Speed work 4 sets of 10 sprints, 25m 10 min conditioned game Intensity: 80% MHR 45 min tactics, set pieces/plays		Match	

Use specific evidence from **Table 6** to explain the suitability of the **in-season** football training programme.

Table 6 the in-season training represents the **competition period**. For the footballer this involves **maintaining the fitness levels** built up during the pre-season but also having a **focus on developing skill and tactics**, and having **time to recover** for the next game. Table 6 is a suitable in-season training programme as there is a large emphasis on specific football skills in every training session. The intensity of the workouts has also increased from the pre-season period, with all training being 80% MHR+.

Award **[0]** for an answer not worthy of credit.
Award **[1]** for a basic understanding of the in-season phase being the competition phase.
Award **[2]** for a moderate understanding of the in-season phase being the competition phase. Major emphasis on maintaining physical fitness and developing skill and tactics.
Award **[3]** for a competent understanding of the in-season phase being the competition phase. Major emphasis on maintaining physical fitness and developing skill and tactics with time to recover. Appropriate reference to Table 6 to justify one of the focus areas.
Award **[4]** for a highly competent understanding of the in-season phase being the competition phase. Major emphasis on maintaining physical fitness and developing skill and tactics with time to recover; with detailed reference to Table 6. [4]

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16 A person completed the **'Couch to 5K'** programme, with a graduation run time of 5 km in 35 minutes. The person sets a new goal to run **10 km in 55 minutes**, in 8 weeks time. To help complete this goal the person joined a running club. **Table 7** outlines the **Week 1** session plan provided by the running coach.

Table 7

Mon	Tue	Wed	Thur	Fri	Sat	Sun
Run 10km; CSP; 5 min 30 sec pace/ km		Swim 3km; CSP; 22 min pace/km	Run 8km; CSP; 5 min pace/km	Swim 3km; CSP; 20 min pace/km	Run 16km; CSP; 5 min pace/km	Run 5km; CSP; 4 min 30sec pace/km

(a) Referring to information in **Table 7** apply the principles of **specificity**, **overload** and **rest/recovery** to evaluate the safety, appropriateness and effectiveness of the person's running programme in Week 1.

Quality of written communication will be assessed in your answer.

Applying the principle of specificity

Selecting the appropriate components of physical fitness:

- For the training to be specific the components of fitness for the event must be reflected in the programme. For this event aerobic energy production and muscular endurance are core. Although the programme reflects muscular endurance as the exercise sessions are requiring the person to work for long periods of time without tiring the intensity for this person is too high.

Selecting the suitable type of exercise:

- The type of exercise should be running because the event is a 10 km run, and it is best to train specifically for the event. It is not appropriate that the coach included two swimming sessions as preparation for the 10 km run. If the running coach had used swimming for a light recovery session this may have been appropriate but not the distance and pace that was recommended.

Selecting the suitable types of training methods:

- Continuous steady pace training is the most appropriate method of training and this is reflected in the training programme for week 1.

Applying the principle of overload and rest/recovery

- The amount of overload the coach sets should depend on the individual's present level of fitness and the amount of training that they are already doing. The initial overload in the first week should be appropriate but relatively comfortable. However, the coach has started with too high a frequency and intensity which would put the person's body under too much stress which could lead to fatigue or injury.
- Frequency: Therefore, the coach should not have created a programme which included six training sessions in week 1 for this individual athlete. Instead the programmes should have started with three or four runs in week 1. This will allow fitness for the 10 km run to develop but also allow sufficient time to recover between runs. The frequency of runs should be increased to four or five per week by applying progressive overload.
- *Intensity and time:* The person can currently run 5 km in 35 mins that is a pace of 7 minutes per kilometre. The running coach has set the intensities for the sessions too high. It is not suitable that the coach has recommended for the person to run longer distances at a pace that is

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faster than the current running speed, e.g. 16 km in 80 minutes which is a pace two minutes faster than the person's current best, and 11 km longer than they can currently run. To prepare them, some runs should be at a faster pace than this but for a shorter time/distance, e.g. 20–30 minutes; some runs should be at a race pace, for a shorter to similar time/distance, e.g. 45–55 minutes and some runs should be slower than race pace but over a longer time/distance than 10 km, e.g. 60–90 minutes.

Award **[0]** for an answer not worthy of credit.

Level 1 ([1]–[3])
Overall impression – basic
Basic to moderate application and understanding of specificity, overload and rest/recovery as principles of training to evaluate the safety, appropriateness and effectiveness of a training programme.
The quality of written communication is basic. The candidate makes only a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 ([4]–[6])
Overall impression – good
Moderate to competent application and understanding of specificity, overload and rest/recovery as principles of training to evaluate the safety, appropriateness and effectiveness of a training programme.
The quality of written communication is good. The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is some use of specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning clear.

Level 3 ([7]–[9])
Overall impression – excellent
A highly competent application and understanding of specificity, overload and rest/recovery as principles of training to evaluate the safety, appropriateness and effectiveness of a training programme.
The quality of written communication is excellent. The candidate successfully selects and uses the most appropriate form and style of writing. Relevant material is organised with a high degree of clarity and coherence. There is widespread and accurate use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently are of a sufficiently high standard to make meaning clear. [9]

(b) Complete **Table 8** to create a safe, appropriate and effective 8 week training programme for the person by applying effectively the principles of **specificity, overload, progressive overload** and **peaking**.

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Table 8

	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Week 1 – 2	Run 7 km; CSP; 7 min pace/km = 49 min		Run 5 km; CSP; 6 min 30 sec pace/km = 32 min 30 secs		Run 8 km; CSP; 7 min 15 sec pace/km = 58 min		
Week 3 – 4	Run 8 km; CSP; 6 min 30 secs pace/km = 52 min		Run 5 km; CSP; 5 min 45 sec pace/km = 28 min 45 secs		Run 9 km; CSP; 7 min pace/km = 63 min		Run 10 km; CSP; 7 min pace/km = 70 min
Week 5–6		Run 8 km; CSP; 6 min pace/km = 48 min		Run 5 km; CSP; 5 min 15 sec pace/km = 26 min 15 secs	Run 9 km; CSP; 6 min 15 sec pace/km = 56 min 25 secs		Run 12 km; CSP; 6 min 30 sec pace/km = 78 mins
Week 7		Run 8 km; CSP; 5 min pace/km = 40 min	Run 10 km; CSP; 6 min pace/km = 60 min		Run 9 km; CSP; 5 min 45 secs pace/km = 51 min 45 secs		Run 12 km; CSP; 6 min pace/km = 72 min
Week 8		Run 8 km; CSP; 5 min 30 secs pace/km = 44 min		Run 4 km; CSP; 5 min 30 sec pace/km 22 min		10 KM race 5 min 30 sec pace/km = 55 min	

Award [0] for an answer not worthy of credit.
Award [1] for a correct but moderate application of the principle of training to effectively plan a safe and appropriate training programme.
Award [2] for a correct, practical and competent application of the principle of training to effectively plan a safe and appropriate training programme.
(4 × [2]) [8]

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Total **100**