



Rewarding Learning

**General Certificate of Secondary Education
2017**

Physical Education

[G9741]

FRIDAY 19 MAY, AFTERNOON

**MARK
SCHEME**

General Marking Instructions

Introduction

Mark schemes are published to assist teachers and students in their preparation for examinations. Through the mark schemes teachers and students will be able to see what examiners are looking for in response to questions and exactly where the marks have been awarded. The publishing of the mark schemes may help to show that examiners are not concerned about finding out what a student does not know but rather with rewarding students for what they do know.

The Purpose of Mark Schemes

Examination papers are set and revised by teams of examiners and revisers appointed by the Council. The teams of examiners and revisers include experienced teachers who are familiar with the level and standards expected of students in schools and colleges.

The job of the examiners is to set the questions and the mark schemes; and the job of the revisers is to review the questions and mark schemes commenting on a large range of issues about which they must be satisfied before the question papers and mark schemes are finalised.

The questions and the mark schemes are developed in association with each other so that the issues of differentiation and positive achievement can be addressed right from the start. Mark schemes, therefore, are regarded as part of an integral process which begins with the setting of questions and ends with the marking of the examination.

The main purpose of the mark scheme is to provide a uniform basis for the marking process so that all the markers are following exactly the same instructions and making the same judgements in so far as this is possible. Before marking begins a standardising meeting is held where all the markers are briefed using the mark scheme and samples of the students' work in the form of scripts. Consideration is also given at this stage to any comments on the operational papers received from teachers and their organisations. During this meeting, and up to and including the end of the marking, there is provision for amendments to be made to the mark scheme. What is published represents this final form of the mark scheme.

It is important to recognise that in some cases there may well be other correct responses which are equally acceptable to those published: the mark scheme can only cover those responses which emerged in the examination. There may also be instances where certain judgements may have to be left to the experience of the examiner, for example, where there is no absolute correct response – all teachers will be familiar with making such judgements.

- 1 Physical fitness is the ability to perform physical tasks **efficiently** and **effectively**.

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

Award [1] for each of **efficiently** and **effectively**.

(2 × [1])

[2]

AVAILABLE
MARKS

2

- 2 e.g. Exercise regularly; eat a balanced, healthy diet; get sufficient sleep; do not take illegal drugs; do not smoke cigarettes.

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

Award [1] for an acceptable significant action from a person's lifestyle that should help maintain physical well-being.

(2 × [1])

[2]

2

- 3 (a) E.g. Camogie; rugby; gaelic football; hockey, badminton.

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

Award [1] for an acceptable sport or physical activity that may interest an **extrovert**.

[1]

Explanation:

e.g. An extrovert is a person who is energised by being around other people.

They are physical, outgoing, mix well with others and are confident about themselves. Team games match well with these characteristics.

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

Award [1] for appropriately matching **one** characteristic of an extrovert to an acceptable sport or physical activity.

Award [2] for appropriately matching **two** characteristics of an extrovert to an acceptable sport or physical activity.

[2]

- (b) e.g. archery; diving; golf; sailing.

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

Award [1] for an acceptable sport or physical activity that may interest an **introvert**.

[1]

Explanation: An introvert is energised by being alone. They enjoy solitude but they also enjoy friends. Introverts tend to prefer activities that do not involve physical contact. They often prefer individual activities because they are sensitive, inward-looking, careful and are often not confident in themselves.

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

Award [1] for appropriately matching **one** characteristic of an introvert to an acceptable sport or physical activity.

Award [2] for appropriately matching **two** characteristics of an introvert to an acceptable sport or physical activity.

[2]

6

- 4 Chosen sport/physical activity: e.g. Polo; motorcar racing; sailing; tennis; golf.

Explanation: Some sports and physical activities require a lot of money to be able to participate in them. Being affluent means you have lots of money available and so it is possible to participate and sustain involvement in the sport or physical activity. If you do not have money readily available, you could not participate.

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

Award [1] for identifying a sport or physical activity that requires affluence to sustain involvement in it and explains why being affluent allows this to be the case.

[1]

1

		AVAILABLE MARKS
<p>5 (a) A person needs to eat food:</p> <ul style="list-style-type: none"> • for growth and repair. • to provide substances to regulate the processes of the body. • to carry out all voluntary physical activity. • to help in the prevention of illness or disease. <p>Award [0] for an answer not worthy of credit. Award [1] for any one of the above answers.</p>	[1]	
<p>(b) Foods may also contain: fats; proteins; minerals or dietary fibre.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for any one of fats; proteins; minerals or dietary fibre. (3 × [1])</p>	[3]	4
<p>6 The tar narrows the bronchioles of the lungs. The tar irritates the delicate mucus membrane lining the air passage, causing more mucus to be produced. The tar damages the cilia. The tar blocks the alveoli. The tar causes cancer.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for any one of the above, e.g. the tar narrows the bronchioles. (2 × [1])</p>	[2]	2
<p>7 Examples of aspects of the badminton performance that would be affected: coordination; balance; information processing; judgement and decision making; reaction time.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for any one of coordination; balance; information processing; judgement and decision making; reaction time. (2 × [1])</p>	[2]	2
<p>8 e.g. liver, brain, heart, pancreas.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for any one acceptable organ.</p>	[1]	1

- 9 Exercise makes the person's metabolism or metabolic rate rise. This means that the person burns more kilocalories so this helps with weight control. When the person stops exercising the metabolism or metabolic rate continues to remain high for a period of time. This means the person continues to burn kilocalories at a faster rate even though the person has stopped exercising, so this helps further with weight control.

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

Award [1] for stating that the metabolism or metabolic rate rises with exercise.

Award [2] for explaining that the metabolism or metabolic rate rises with exercise.

AND This means the person burns more kilocalories so this helps with weight control.

Award [3] for explaining that the metabolism or metabolic rate rises with exercise.

AND This means the person burns more kilocalories so this helps with weight control. **AND** When the person stops exercising the metabolism or metabolic rate continues to remain high for a period of time. This means the person continues to burn kilocalories at a faster rate even though they have stopped exercising, so this helps further with weight control. [3]

AVAILABLE
MARKS

3

- 10 (a) Muscular power; muscular strength or muscular speed.

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

Award [1] for any one of muscular power; muscular strength or muscular speed.

(2 × [1])

[2]

- (b) (i) The 800 m requires the athlete to work with a near sprint effort at the start until position in the race is established. After this start the athlete needs to work hard but at a pace that they can maintain for over one minute. Finally, the athlete has to give maximum effort to sprint flat-out to finish the race.

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

Award [1] for explaining that the athlete has to work with a near sprint effort at the start of the 800 m until position in the race is established.

Award [2] for explaining that the athlete has to work with a near sprint effort at the start of the 800 m until position in the race is established.

AND After this start the athlete needs to work hard but at a pace that they can maintain for over one minute.

Award [3] for explaining that the athlete has to work with a near sprint effort at the start of the 800 m until position in the race is established.

AND After this start the athlete needs to work hard but at a pace that they can maintain for over one minute. **AND** Finally, the athlete has to give maximum effort to sprint flat-out to finish the race. [3]

- (ii) The anaerobic energy system would be mostly used at the start of the 800 m race for the near sprint start. The aerobic energy system would be mostly used for the middle part of the race when the athlete needs to work hard but at a pace that they can maintain for over one minute. Finally, the anaerobic energy system would be mostly used for giving maximum effort to sprint flat-out to finish the race.

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

Award [1] for explaining that the **anaerobic energy system** would be mostly **used at the start** of the 800 m race for the near sprint start.

Award [2] for explaining that the **anaerobic energy system** would be mostly **used at the start** of the 800 m race for the near sprint start. **AND**

The aerobic energy system would mostly be used for the middle part of the race when the athlete needs to work hard but at a pace that they can maintain for over one minute.

Award [3] for explaining that the **anaerobic energy system** would be mostly **used at the start** of the 800 m race for the near sprint start. **AND** The **aerobic energy system would be mostly used for the middle part of the race** when the athlete needs to work hard but at a pace that they can maintain for over one minute. **AND** Finally, the **anaerobic energy system would be mostly used for giving maximum effort to sprint flat-out to finish the race.** [3]

- (iii) Flexibility is not really important for an elite athlete during the 800 m race as the actions are running.

Or

Flexibility is important as the elite athlete has to sprint and if they are not flexible they could pull a muscle.

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

Award [1] for an acceptable explanation for the relative importance of flexibility for an elite athlete competing in an 800 m race. [1]

- (iv) Muscular endurance is very important for an elite athlete during the 800 m race as the muscles are required to work for a long period of time at just less than maximum effort.

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

Award [1] for an acceptable explanation for the relative importance of muscular endurance for an elite athlete competing in an 800 m race. [1]

AVAILABLE
MARKS

10

- 11 (a) Based on the candidate's diagram/s and instructions:

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

Award [1] for diagram/s and/or instructions that to some extent explain how to perform an **isotonic** exercise for the **biceps**.

Award [2] for diagram/s and/or instructions that clearly and fully explain how to perform an **isotonic** exercise for the **biceps**. [2]

- (b) Based on the candidate's diagram/s and instructions:

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

Award [1] for diagram/s and/or instructions that to some extent explain how to perform an **isometric** exercise for the **biceps**.

Award [2] for diagram/s and/or instructions that clearly and fully explain how to perform an **isometric** exercise for the **biceps**. [2]

4

		AVAILABLE MARKS
<p>12 Intensity: within range 55%–75% MHR. [1]</p> <p>Time: within range 15–30 minutes. [1]</p> <p>Example explanations: One sequence could be to increase the exercise time for the person, for example from a 15 minute walk to a 20 minute walk and once the person coped with this time to increase the walk to 25 minutes and so this could continue. Or One sequence could be to increase the intensity for the person, for example from walking at a moderate pace (70% MHR) to walking at a slightly quicker pace (75% MHR) and once the person coped with this intensity to increase the pace of the walk further (80% MHR) and so this could continue. Or One sequence could be to increase the exercise time for the person, for example from a 15 minute walk to a 20 minute walk and once they coped with this time to increase the intensity for the person, for example from walking at a moderate pace (70% MHR) to walking at a slightly quicker pace (75% MHR) for the 20 minutes and this sequence could continue.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for an explanation that to some extent explains an acceptable sequence for how the intensity (% MHR) OR work time would change over the exercise programme. Award [2] for an explanation that clearly and fully explains an acceptable sequence for how the intensity (% MHR) AND work time would change over the exercise programme. [2]</p>	<p>[1]</p> <p>[1]</p> <p>[2]</p>	<p>4</p>
<p>13 (a) Example answers: Both fartlek and interval training have times when the intensity of the exercise is increased (Raised intensities). Both fartlek and interval training have recovery times after the times of higher intensity exercise (Recovery times). Both fartlek and interval training have repetitions of the periods of intense exercise (Repetitions). Both fartlek and interval training can be used to develop aerobic and anaerobic fitness (Use).</p> <p>Award [0] for an answer not worthy of credit. Award [1] for clearly identifying one acceptable similarity between performing fartlek training and interval training. [1]</p> <p>(b) Example answers: In performing fartlek training, the intensities, work-times, recovery times and number of repetitions are decided during the workout whereas with interval training these are planned in advance (Planning). In performing fartlek training, the intensities, work-times, recovery times and number of repetitions are decided during the workout whereas with interval training these are set e.g set distance; set work-time; set recovery time; set number of repetitions (Structure).</p> <p>Award [0] for an answer not worthy of credit. Award [1] for clearly identifying one acceptable difference between performing fartlek training and interval training. [1]</p>	<p>[1]</p> <p>[1]</p>	<p>2</p>

		AVAILABLE MARKS
14	<p>The work time for intervals would normally be shorter for developing anaerobic fitness as opposed to developing aerobic fitness. This is because to develop anaerobic fitness the intensity is maximum or near maximum, so it is not possible for the person to work at this high intensity for too long. However, with aerobic interval training the intensity is lower than the anaerobic threshold, so the work time can be longer.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for an explanation that to some extent explains the differences in the work times when interval training is being used to develop anaerobic fitness as opposed to aerobic fitness; e.g. The work time would normally be shorter for developing anaerobic fitness as opposed to developing aerobic fitness. Award [2] for an explanation that clearly and fully explains the differences in the work times when interval training is being used to develop anaerobic fitness as opposed to aerobic fitness; e.g. The work time would normally be shorter for developing anaerobic fitness as opposed to developing aerobic fitness. This is because to develop anaerobic fitness the intensity is maximum or near maximum, so it is not possible for the person to work at this high intensity for too long. However, with aerobic interval training the intensity is lower than the anaerobic threshold, so the work time can be longer.</p>	2
15	<p>Examples: mowing the grass; weeding the garden; washing the car; dusting the house; vacuuming the floors; painting a room.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for an acceptable task or chore that may be done at home and would count as exercise. (2 × [1])</p>	2
16	<p>'F' stands for Frequency. [1] This means how often a person trains per week. [1]</p> <p>'I' stands for Intensity. [1] This means how hard a person works when training. [1]</p> <p>'T' stands for Time. [1] This means how long a person works for in a workout. [1]</p> <p>'T' stands for Type of Exercise. [1] This means a person doing an appropriate exercise [1]</p>	8
17	<p>A person's pulse is the number of heartbeats per minute. The person knows the aerobic training programme is effective if the resting pulse goes down or is lower than it was before the training programme.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for correctly answering what a person's pulse is OR for correctly explaining how a person knows from the resting pulse whether their aerobic training programme is effective. Award [2] for correctly answering what a person's pulse is AND for correctly explaining how a person knows from the resting pulse whether their aerobic training programme is effective.</p>	2

18 Example answers:

By assessing levels of fitness a person can:

- judge their level of fitness before they begin their training programme.
- discover their strengths and weaknesses.
- set realistic short-term and intermediate goals/targets.
- stay motivated as they have short-term and intermediate goals/targets.
- judge the progress being made during the training programme.
- adjust their training programme in light of the information gained from the assessments.
- know that the training programme is effective from the results of the tests, etc.

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

Award [1] for an answer that to some extent explains a benefit of assessing and monitoring a person's level of physical fitness in the relevant components for their sport/event;

e.g. A person can judge their level of fitness.

Award [2] for a valid answer that clearly and fully explains a benefit of assessing and monitoring a person's level of physical fitness in the relevant components for their sport/event;

e.g. A person can judge their level of fitness before they begin their training programme.

(3 × [2])

[6]

6

- 19 (a) The role or function of the respiratory system is to transfer oxygen from the air into the blood, and carbon dioxide and water vapour from the blood to the outside air.

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

Award [1] for an answer that to some extent explains the role or function of the respiratory system;

e.g. The role or function of the respiratory system is to transfer oxygen from the air into the blood;

Award [2] for an answer that clearly and fully explains the role or function of the respiratory system;

e.g. The role or function of the respiratory system is to transfer oxygen from the air into the blood, and carbon dioxide and water vapour from the blood to the outside air.

[2]

- (b) Example answer:

This helps improve aerobic performances because the person can breathe deeper than before. The stronger or more efficient and effective intercostal muscles and diaphragm create a larger chest cavity, so more air can be taken into the lungs with each breath. This is the person's vital capacity. The greater vital capacity means more oxygen is available in each breath. This would help to improve aerobic performances.

Or

This helps improve aerobic performances because the more efficient and effective intercostal muscles and diaphragm will not tire as quickly as before, therefore the person's ventilation or amount of air breathed in over each minute will be able to be sustained for longer. Also because the vital capacity is increased, the ventilation or amount of air breathed in over each minute will also increase. This means more oxygen is available over each minute. This would help to improve aerobic performances.

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

Award [1] for an answer that to some extent explains how the intercostal muscles and the diaphragm becoming more efficient and effective will help improve aerobic performances;

e.g. *This helps improve aerobic performances because* the person can breathe deeper than before. This means more oxygen is available in each breath. This would help to improve aerobic performances.

Award [2] for an answer that clearly and fully explains how the intercostal muscles and the diaphragm becoming more efficient and effective will help improve aerobic performances;

This helps improve aerobic performances because the person can breathe deeper than before. The stronger or more efficient and effective intercostal muscles and diaphragm create a larger chest cavity, so more air can be taken into the lungs with each breath. This means more oxygen is available in each breath. This would help to improve aerobic performances.

Award [3] for an answer that clearly and fully explains, using the appropriate terminology, how the intercostal muscles and the diaphragm becoming more efficient and effective will help improve aerobic performances;

This helps improve aerobic performances because the person can breathe deeper than before. The stronger or more efficient and effective intercostal muscles and diaphragm create a larger chest cavity, so more air can be taken into the lungs with each breath. This is the person's vital capacity. The greater vital capacity means more oxygen is available in each breath. This would help to improve aerobic performances. [3]

- (c) *This happens because* the alveoli in the lungs get an increased capillary network. This means the surface area for gaseous exchange is increased.

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

Award [1] for an answer that clearly explains how the surface area for gaseous exchange is increased;

e.g. *This happens because* the alveoli in the lungs get an increased capillary network. This means the surface area for gaseous exchange is increased. [1]

6

- 20 The candidate names a physical activity or sport.

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

Award [1] for an answer that clearly identifies a high-risk situation for the named physical activity or sport and identifies the possible outcome of that situation.

Award [1] for an answer that clearly identifies an appropriate action that should be taken to minimise the risk for the named physical activity or sport.

(3 × [2])

[6]

6

- 21 (a) Example answer:

Swimming the 100m in 20 seconds would be impossible for him and therefore not an appropriate time. This needs to be changed.

If the time was changed to, for example, 2 minutes this would be feasible for him (30 seconds/25 metres) and more appropriate.

With the recommended time of 2 minutes for each interval of 100m, the 10 repetitions × 100m would be appropriate and effective as he is physically fit. Also, if he swam the 100m in 2 minutes then the recovery time is appropriate as the ratio would be 1:1. The workout would also last 40 minutes (20 minutes work; 20 minutes recovery) .

Overall this would now make the workout appropriate and effective for developing aerobic fitness.

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

Award [1] for an answer that correctly identifies what needs to be changed in the workout.

Award [2] for an answer that correctly identifies what needs to be changed in the workout **and** recommends appropriate changes that will make the workout effective for developing aerobic fitness.

Award [3] for an answer that correctly identifies what needs to be changed in the workout; recommends appropriate changes and explains why these changes will make the workout effective for developing aerobic fitness. [3]

(b) Example answer:

The intensity of 95% of MHR is too high a percentage for an aerobic fitness workout so it is not an appropriate intensity. This needs to be changed.

If the intensity was changed to 80% of MHR this would be more feasible for him and more appropriate.

The intensity of 95% of MHR is above the anaerobic threshold. It should be below 90% of MHR, but above 70% of MHR to be appropriate and effective for developing aerobic fitness.

The time of 90 minutes is also not appropriate. If the intensity was 80% of MHR for an aerobic fitness workout, the time of 90 minutes would still be too long for him. A time of between 30–60 minutes would be effective and more appropriate.

Overall this would make the workout appropriate and effective for developing aerobic fitness.

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

Award [1] for an answer that correctly identifies what needs to be changed in the workout.

Award [2] for an answer that correctly identifies what needs to be changed in the workout **and** recommends appropriate changes that will make the workout effective for developing aerobic fitness.

Award [3] for an answer that correctly identifies what needs to be changed in the workout; recommends appropriate changes and explains why these changes will make the workout effective for developing aerobic fitness. [3]

(c) Example answer:

The 5 repetitions are too low and would not be appropriate and effective. This needs to be changed.

The number of repetitions would need to be around 20 to be effective.

With the 20 repetitions, he would do 20 minutes of reasonable hard swimming with only 30 seconds rest between each repetition.

The intensity of his heart rate at 160 is appropriate and effective as he would be working at around 80% of MHR. This is within the acceptable range of 70–90% for an aerobic fitness workout.

The time of 1 minute for each 'interval' is appropriate and effective as he is working reasonably hard at 80% of MHR.

The recovery time of 30 seconds between each repetition would be appropriate and effective as it is less than the 1:1 ratio of work to recovery time.

Overall this would now make the workout appropriate and effective for developing aerobic fitness.

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

Award [1] for an answer that correctly identifies what needs to be changed in the workout.

Award [2] for an answer that correctly identifies what needs to be changed in the workout **and** recommends appropriate changes that will make the workout effective for developing aerobic fitness.

Award [3] for an answer that correctly identifies what needs to be changed in the workout; recommends appropriate changes and explains why these changes will make the workout effective for developing aerobic fitness. [3]

(d) Example answer:

The intensity is not appropriate for him. He would have to have an average speed of 30 mph for him to complete the 15 miles in 30 minutes. This needs to be changed.

The intensity would need to be lower than this, for example 15 mph for him to complete the 15 miles.

The distance of 15 miles for an aerobic fitness workout would be appropriate and feasible for him. If the intensity was 15 mph, the 15 miles would be completed in 60 minutes. This would make this an effective cycling workout to develop aerobic fitness.

Overall this would now make the workout appropriate and effective for developing aerobic fitness.

The 30 minutes of cycling could also be appropriate if the intensity was changed to 15 mph. In this case the distance would have to be decreased to 7.5 miles.

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

Award [1] for an answer that correctly identifies what needs to be changed in the workout.

Award [2] for an answer that correctly identifies what needs to be changed in the workout **and** recommends appropriate changes that will make the workout effective for developing aerobic fitness.

Award [3] for an answer that correctly identifies what needs to be changed in the workout; recommends appropriate changes and explains why these changes will make the workout effective for developing aerobic fitness. [3]

AVAILABLE
MARKS

12

22 (a) Example answer for the principle of specificity:

The results of training are very specific, so it is important that the training matches the demands of the event.

If a competitive athlete was to plan an appropriate and effective training programme for a specific event then the athlete must know and understand the physical demands of the event. If the athlete knows and understands the physical demands of the event then the athlete can decide the relative importance of the components of fitness for inclusion in the training programme.

The athlete must then decide the type of exercise and the training methods that best develop these components and that most closely match the event. In other words, if the event requires the athlete to continually run but with bursts of speed included, then the type of exercise should be running and the training should include interval training.

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

Award [1] for an answer that shows **sound understanding of one thing** that should happen to apply the principle of specificity to create an appropriate and effective training programme for a competitive athlete or sports person; e.g. The athlete must know and understand the physical demands of the event.

Award [2] for an answer that shows **sound understanding of two things** that should happen to apply the principle of specificity to create an appropriate and effective training programme for a competitive athlete or sports person;

e.g. The athlete must know and understand the physical demands of the event.

If the athlete knows and understands the physical demands of the event then the athlete can decide the relative importance of the components of fitness for inclusion in the training programme.

Award [3] for an answer that shows **sound understanding of three things** that should happen to apply the principle of specificity to create an appropriate and effective training programme for a competitive athlete or sports person;

e.g. The athlete must know and understand the physical demands of the event.

If the athlete knows and understands the physical demands of the event then the athlete can decide the relative importance of the components of fitness for inclusion in the training programme.

The athlete must then decide the type of exercise and the training methods that should be used in the training programme.

Award [4] for an answer that shows **sound understanding of four things** that should happen to apply the principle of specificity to create an appropriate and effective training programme for a competitive athlete or sports person;

e.g. The athlete must know and understand the physical demands of the event.

If the athlete knows and understands the physical demands of the event then the athlete can decide the relative importance of the components of fitness for inclusion in the training programme.

The athlete must then decide the type of exercise and the training methods that should be used in the training programme.

If the event requires the athlete to continually run but with bursts of speed included then the type of exercise should be running and the training should include interval training. [4]

(b) Example answer for the principle of variety:

For a specific event for a competitive athlete, the type of exercise done (e.g. running) will remain the same, however, the principle of variety can be applied by using different training methods, using different venues for the training, training at different times, or training with different people.

Answer [0] for an answer not worthy of credit.

Award [1] for an answer that shows **sound understanding of one thing** that should happen to apply the principle of variety to create an appropriate and effective training programme for a competitive athlete or sports person; e.g. For a specific event the type of exercise will remain the same, however, the principle of variety can be applied by using different training methods.

Award [2] for an answer that shows **sound understanding of two things** that should happen to apply the principle of variety to create an appropriate and effective training programme for a competitive athlete or sports person; e.g. For a specific event the type of exercise will remain the same, however, the principle of variety can be applied by using different training methods, using different venues for the training, training at different times, or training with different people. [2]

- (c) Example answer for the principle of progressive overload:
Improvement can only occur if the principle of overload is applied. That means the athlete must work harder than they have been working before. This can be achieved by increasing the frequency, intensity or time spent training, or by increasing any combination of them.
Once the athlete's body adapts to the overload, the athlete overloads again and so it continues.
The skill is to add enough stress to make a difference and make the body adapt, but not to add too much stress that could lead to fatigue or injury.
Award [0] for an answer not worthy of credit.
Award [1] for an answer that shows **sound understanding of one thing** that should happen to apply the principle of progressive overload to create an appropriate and effective training programme for a competitive athlete or sports person;
e.g. Improvement can only occur if the principle of progressive overload is applied. That means the athlete must work harder than they have been working before.
Award [2] for an answer that shows **sound understanding of two things** that should happen to apply the principle of progressive overload to create an appropriate and effective training programme for a competitive athlete or sports person;
e.g. Improvement can only occur if the principle of progressive overload is applied. That means the athlete must work harder than they have been working before. This can be achieved by increasing the frequency, intensity or time spent training, or by increasing any combination of them.
Award [3] for an answer that shows a **sound understanding of three things** that should happen to apply the principle of progressive overload to create an appropriate and effective training programme for a competitive athlete or sports person;
e.g. Improvement can only occur if the principle of progressive overload is applied. That means the athlete must work harder than they have been working before. This can be achieved by increasing the frequency, intensity or time spent training, or by increasing any combination of them. Once the athlete's body adapts to the overload, the person overloads again and so it continues.
The skill is to add enough stress to make a difference and make the body adapt, but not to add too much stress that could lead to fatigue or injury. [3]
- (d) Example answer for the principle of peaking:
The principal of peaking is applied in the final phase prior to an important competition.
In the first part of the peaking phase the athlete performs much less work, but the work the athlete does is at a high intensity.
The second part of the peaking phase takes place some days before the important competition. The athlete eases off or tapers off with their training. This is to allow the muscles to recover completely and the fuel stores to be full.
Award [0] for an answer not worthy of credit.
Award [1] for an answer that shows **sound understanding of one thing** that should happen to apply the principle of peaking before an important competition for a competitive athlete or sports person;
e.g. The principle of peaking is applied in the final phase prior to an important competition. In the first part of the peaking phase the athlete performs much less work.
Award [2] for an answer that shows **sound understanding of two things** that should happen to apply the principle of peaking before an important competition for a competitive athlete or sports person.
e.g. The principle of peaking is applied in the final phase prior to an

important competition. In the first part of the peaking phase the athlete performs much less work, but the work the athlete does is at a high intensity. Award [3] for an answer that shows **sound understanding of three things** that should happen to apply the principle of peaking before an important competition for a competitive athlete or sports person;

e.g. The principle of peaking is applied in the final phase prior to an important competition. In the first part of the peaking phase the athlete performs much less work, but the work the athlete does is at a high intensity. The second part of the peaking phase takes place some days before the important competition. The athlete eases off or tapers off with their training.

Award [4] for an answer that shows **sound understanding of four things** that should happen to apply the principle of peaking before an important competition for a competitive athlete or sports person;

e.g. The principle of peaking is applied in the final phase prior to an important competition. In the first part of the peaking phase the athlete performs much less work, but the work the athlete does is at a high intensity. The second part of the peaking phase takes place some days before the important competition. The athlete eases off or tapers off with their training.

This is to allow the muscles to recover completely and the fuel stores to be full.

[4]

AVAILABLE
MARKS

13

Total**100**