



Rewarding Learning

**General Certificate of Secondary Education
2019**

Physical Education

Paper 1

Factors Underpinning
Health and Performance

[G9771]

WEDNESDAY 15 MAY, MORNING

**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.

1 Fig. 1 shows the location of four different synovial joints.

Identify the **type** of synovial joint circled in Fig. 1.

neck = **Pivot**

hip = **Ball and socket**

wrist = **Condyloid**

knee = **Hinge**

(4 × [1])

[4]

AVAILABLE
MARKS

4

2 Explain, using an example, how the skeleton provides protection during physical activity.

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

Award **[1]** for explaining the function of the skeleton is to **protect vital organs** during physical activity.

Award **[1]** for a **clear example** of how the skeleton provides protection.

The rib cage protects the heart and lungs; the brain is protected by the cranium/skull during physical activities and sport.

(2 × [1])

[2]

2

3 (a) State which part of a synovial joint produces synovial fluid.

Synovial fluid is produced by the **synovial membrane**.

[1]

(b) Explain how the production of synovial fluid will help an athlete's movement.

Example answers:

- Lubricates the joints
- Reduces friction on the joint
- Nourishes the cartilage

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

Award **[1]** for explaining the production of synovial fluid will help with an athlete's movement as it **lubricates the joints**.

Award **[1]** for explaining the production of synovial fluid will help with an athlete's movement as it **reduces friction on the joint**.

(2 × [1])

[2]

3

4 Explain the action of the antagonistic muscle pairs as a person performs a biceps curl.

- The muscles involved in the biceps curl are the biceps and the triceps.
- As one muscle contracts, the other muscle relaxes.
- The biceps becomes the agonist/prime mover when it contracts to flex the arm at the elbow; the triceps becomes the antagonist muscle that is relaxing when performing the biceps curl.
- The triceps becomes the agonist/prime mover when it contracts to extend the arm at the elbow; the biceps becomes the antagonist muscle that is relaxing when performing the biceps curl.

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

Award **[1]** for a limited explanation of how antagonistic muscles work together, in pairs, to contract and relax to enable flexion and extension of the arm to perform a biceps curl.

The muscles involved in the biceps curl are the biceps and the triceps.

Award **[2]** for a moderate explanation of how antagonistic muscles work together, in pairs, to contract and relax to enable flexion and extension of the arm to perform a biceps curl.

The muscles involved in the biceps curl are the biceps and the triceps. As one muscle contracts, the other muscle relaxes.

Award **[3]** for a clear, competent and detailed explanation of how antagonistic muscles work together, in pairs, to contract and relax to enable flexion and extension of the arm to perform a biceps curl.

The muscles involved in the biceps curl are the biceps and the triceps. As one muscle contracts, the other muscle relaxes. The biceps becomes the agonist/prime mover when it contracts to flex the arm at the elbow; the triceps becomes the antagonist muscle that is relaxing when performing the biceps curl. [3]

AVAILABLE
MARKS

3

5 Study **Fig. 2** which shows the relationship between type I (slow twitch) and type II (fast twitch) muscle fibres for three athletes. Answer the questions that follow.

(a) State the athlete most likely to be a marathon runner.

The marathon runner is athlete **A** [1]

(b) Use **specific** evidence from **Fig. 2** to justify your choice.

Athlete A has the **highest percentage, 80%, of type I** (slow twitch) muscle fibres; OR Athlete A has the **lowest percentage, 20%, type II** (fast twitch) muscle fibres.

Athlete A is the marathon runner as their muscles have to **work for a long duration without getting tired**, a typical characteristic of type I muscle fibres.

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

Award **[1]** for an acceptable, specific and correct interpretation of athlete A being the marathon runner.

Athlete A has the highest percentage, 80%, of type I (slow twitch) muscle fibres; OR Athlete A has the lowest percentage, 20%, type II (fast twitch) muscle fibres.

Award **[2]** for an acceptable, specific and correct interpretation of athlete A being the marathon runner; and linking a characteristic of type I muscle fibres to the runner's performance.

Athlete A has the highest percentage, 80%, of type I (slow twitch) muscle fibres; OR Athlete A has the lowest percentage, 20%, type II (fast twitch) muscle fibres. Athlete A is a marathon runner as their muscles have to work for a long duration without getting tired.

(2 × [1]) [2]

(c) State the athlete most likely to be a shot-putter.

The shot-putter is athlete **C** [1]

(d) Use **specific** evidence from **Fig 2.** to justify your choice.

Athlete C has the **highest percentage, 80%, of type II** (fast twitch) muscle fibres; OR Athlete C has the **lowest percentage, 20%, type I** (slow twitch) muscle fibres.

Athlete C is a shot-putter as their muscles have to **contract very quickly with great force in a very short time**, a typical characteristic of type II muscle fibres.

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

Award **[1]** for an acceptable, specific and correct interpretation of athlete C being a shot-putter.

Athlete C has the highest percentage, 80%, of type II (fast twitch) muscle fibres; OR Athlete C has the lowest percentage, 20%, type I (slow twitch) muscle fibres.

Award **[2]** for an acceptable, specific and correct interpretation of athlete C being a shot-putter; and linking a characteristic of type II muscle fibres to the runners performance.

Athlete C has the highest percentage, 80%, of type II (fast twitch) muscle fibres; OR Athlete C has the lowest percentage, 20%, type I (slow twitch) muscle fibres. Athlete C is a shot-putter as their muscles have to contract very quickly with great force in a very short time, a typical characteristic of type II muscle fibres.

(2 × [1]) [2]

AVAILABLE
MARKS

6

- 6 A person joins a running club and focuses on aerobic training for 12 weeks. State **three physical changes** this will have on the person's **cardiovascular system**. Explain how each of these changes will help improve performance.

Example answers:

- The heart walls become thicker and stronger. This has the effect of increasing stroke volume (the volume of blood ejected from the heart per beat) which helps performance because the chambers can be emptied more fully on each contraction bringing more O₂ to the working muscles.
- Red blood cell count increases. This improves the body's ability to transport oxygen to the muscles.
- Increased capillarisation (more blood capillaries develop in the muscles). This helps performance as it allows for more efficient gaseous exchange of oxygen and carbon dioxide; this can lead to a lower build-up of lactic acid during high intensity exercise.
- Larger and more elastic arteries. This helps performance as there will be an increased blood supply during exercise; decrease in blood pressure.

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

Level 1 ([1]–[2])

Overall impression – basic

Basic to moderate identification and explanation of the physical changes that occur as a result of long-term optimal training on the cardiovascular system. 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 identification and explanation of the physical changes that occur as a result of long-term optimal training on the cardiovascular system. 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 identification and explanation of the physical changes that occur as a result of long-term optimal training on the cardiovascular system. 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 of a sufficiently high standard to make meaning clear.

[6]

AVAILABLE
MARKS

6

7 The respiratory system plays a crucial role for an athlete in sustaining activity.

(a) State one function of the trachea.

The trachea **carries air from the throat into the lungs**. OR
The trachea **catches particles of dust in the cilia**/tiny hairs that are removed through coughing.

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

Award **[1]** for a clear function of the trachea during performance. [1]

(b) State one function of the alveoli.

The alveoli allow the **exchange of gases**/exchange of O₂ and CO₂.

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

Award **[1]** for a clear function of the alveoli during performance. [1]

8 Describe the process of inspiration when a person is resting.

- The **external intercostal muscles contract** (to pull the rib cage up and out).
- The **diaphragm contracts** causing it to flatten.
- The **lungs increase in size**/the muscles contracting **expand the chest cavity**.
- This **decreases the air pressure** inside the lungs/which **causes air to rush in**.

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

Award **[1]–[2]** for a basic to competent description of the process of inspiration when a person is resting.

E.g. The lungs increase in size as the diaphragm contracts.

Award **[3]–[4]** for a highly competent and detailed description of the process of inspiration when a person is resting.

E.g. The lungs increase in size as the external intercostal muscles and diaphragm contracts. This decreases the air pressure inside the lungs causing air to rush in. [4]

9 A person participates in a high intensity circuit class. Explain the short-term effects of this exercise on the digestive system.

- **Blood flow** is largely **diverted to the heart, lungs and working muscles; and away from parts of the digestive system**. For example, **at rest**, the **gut gets 25–30%** of blood flow but **during exercise it gets less than 5%**.
- Exercise **improves the digestion process by strengthening muscles**, which in turn makes it **easier to pass food around the body**/prevent constipation by stimulating the muscles of the bowel.
- Exercise **can slow down the digestive system** in order to **conserve energy for exercise**.
- Exercise **can dehydrate the digestive system**.

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

Level 1 ([1]–[2])

Overall impression – basic

Basic to moderate explanation of the short-term effects of vigorous exercise on the digestive system.

AVAILABLE
MARKS

2

4

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 explanation of the short-term effects of vigorous exercise on the digestive system.

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 explanation of the short-term effects of vigorous exercise on the digestive system.

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 of a sufficiently high standard to make meaning clear.

[6]

6

- 10 Study the example in **Table 1** of an athlete performing a sprint start. State the function of the nervous system at each stage.

Table 1

Stage	Performing a sprint start	Function of the nervous system
1	You are lining up at the start of the 100 m race and you hear the starter's pistol.	Sensory function
2	Your central nervous system processes the sound and makes decisions – pistol means go.	Interpretative function
3	You use your muscles to move your arms and legs to sprint.	Motor function

(3 × [1])

[3]

3

AVAILABLE
MARKS

- 11 (a) In the weeks leading up to a major competition a student feels overwhelmed by the pressure to perform.

State **two** negative coping strategies the student could use which could result in neglecting mental well-being.

Example answers:

- Using drugs, including stimulants and sedatives
- Excessive alcohol use
- Heavy smoking
- Denial/ignoring or denying feelings/avoiding problems
- Withdraw
- Self-harm
- Excessive training
- Excessive work/study

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

Award **[1]** for a clear understanding of a negative coping strategy.

(2 × [1])

[2]

- (b) The Public Health Agency recommends taking the following five positive coping steps to help maintain and improve well-being.

Connect
Keep learning

Be active
Give

Take notice

Give an example of how a person could perform **two** of these coping steps.

Example answers:

- **Connect:** For example, connect with the people around them, e.g. family, friends, colleagues and neighbours at home, work, school or in the local community; spend time developing relationships with people they know or new people, e.g. by joining a debating club.
- **Be active:** For example, go for a walk, run, cycle, play a game, garden or dance this will make the person feel good; discover a physical activity that they enjoy; one that suits the person's level of mobility and fitness.
- **Take notice:** For example, stop or take a moment to look around the world; look for beautiful, new, unusual or extraordinary things in the person's everyday life and think about how that makes them feel; mindfulness
- **Keep learning:** For example, try something new; rediscover an old hobby; or sign up for a course. Take on a different responsibility, e.g. learn to play an instrument or how to cook; set a challenge that the person will enjoy.
- **Give:** For example, do something nice for a friend or stranger; thank someone; smile; volunteer their time or consider joining a community group.

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

Award **[1]** for a clear example of a positive coping step.

(2 × [1])

[2]

4

12 Some adults perform little or no physical activity. They sit about for much of the day reading, watching television, playing video games, or using a mobile phone.

(a) What type of lifestyle are these people leading?

Sedentary lifestyle.

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

Award [1] for the correct type of lifestyle.

[1]

(b) State **two** risks to their health if they continue this type of lifestyle.

Example answers:

- Increased risk of chronic disease, e.g. coronary heart disease, diabetes, bowel cancer, osteoporosis
- High blood pressure
- Increased risk of cognitive decline, e.g. dementia
- Loss of lean muscle tissue (atrophy)
- Increased risk of depression; anxiety
- Less efficient immune system
- Obesity; weight gain
- Mortality/death

Any other acceptable answer

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

Award [1] for clearly identifying a risk to a person's health from leading a sedentary lifestyle.

(2 × [1])

[2]

(c) An adult would like to become physically fit to improve health.

Complete **Table 2** below to show the minimum recommended guidelines of physical activity for adults.

Table 2

	Recommended guidelines of physical activity for adults
Minimum frequency per week	Most days of the week/at least three days
Minimum minutes per week	150 minutes
Minimum intensity	Moderate

(3 × [1])

[3]

AVAILABLE
MARKS

6

- 13** A student wants to join Teen Fit classes at the local gym to improve physical fitness. Explain **one** procedure the fitness instructor should follow with the student before allowing them to take part in the class for the first time.

Example answers:

- Induction; to ensure the student knows how to safely use equipment/ complete exercises.
- PAR-Q; to ensure no existing medical/health conditions that would be made worse by participating in the fitness class.

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

Award **[1]** for identifying a health and safety procedure that should be followed before someone exercises for the first time.

Award **[1]** for clearly explaining why the health and safety procedure should be completed.

(2 × [1])

[2]

2

- 14 (a)** Some athletes illegally take performance-enhancing drugs without regard to possible side-effects or negative consequences. Give **two** reasons, other than to improve performance, why athletes take performance-enhancing drugs.

Example answers:

- Publicity/recognition from athletic success
- Financial gain/win prize money/become face of advertising campaigns
- Gain sponsorship/funding/elite status
- Prevention of nutritional deficiencies
- Train through an injury/illness
- The idea that others use them

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

Award **[1]** for clearly identifying why athletes take performance-enhancing drugs.

(2 × [1])

[2]

- (b)** State **three** possible negative consequences on the athlete of long-term use of performance-enhancing drugs.

Example answers:

- Causes aggressive behaviour/increased moodiness
- Can constitute a psychiatric disorder
- High/low blood pressure
- Liver damage
- Brain damage
- Acute kidney damage
- Addiction/withdrawal symptoms
- Pain suppression can lead to further and more serious injury
- Can lead to constipation
- Exhaustion or over-training
- Heart disease/increased liability to heart attack/stroke
- Sexual and physique problems
- Can cause sleep problems
- Depression
- Development of allergic reaction such as a rash or fever
- Transmission of infectious diseases such as viruses, hepatitis and AIDS
- Overload of the circulation and metabolic shock

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

Award **[1]** for clear understanding of the negative consequences of long term use of performance-enhancing drugs.

(3 × [1])

[3]

5

15 A person's diet can affect their ability when participating in physical activity.

State **three** nutritional components that should be included in a diet and explain how each could help a person's performance in an exercise programme.

Example answers:

- Carbohydrates; to provide the main source of energy throughout the exercise session/to ensure the person can keep going to their maximum.
- Fats; to provide a secondary source of energy throughout the exercise session; can act as an insulator to help keep the person warm when exercising/so the person can continue to exercise in cold weather.
- Proteins; will help with the growth or repair of muscles to reduce recovery time between exercise sessions; which will delay the feeling of tiredness.
- Water; to maintain fluid levels or to avoid dehydration to help concentration or reduce fatigue; to continue to exercise effectively.
- Minerals; e.g. iron – increase the body's efficiency to carry oxygen to the working muscles of the body which will allow them to compete effectively for longer; e.g. sodium – help with the contraction of muscles/the transmission of nerve impulses to make performance more effective.
- Vitamins; e.g. vitamin C – to protect against disease and infection which will enable training to continue so fitness levels will not be lost; e.g. vitamin B – help release energy from food so will be able to keep going for longer.
- Fibre; helps reduce levels of cholesterol making the heart more efficient which will allow them to keep working for longer.

NB Named vitamins and minerals correctly linked to how it helps performance are acceptable. Fats can only be credited once.

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

Level 1 ([1]–[2])

Overall impression – basic

Basic to moderate explanation of the components of diet and their effect on performance in physical activity.

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 explanation of the components of diet and their effect on performance in physical activity.

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 explanation of the components of diet and their effect on performance in physical activity.

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 of a sufficiently high standard to make meaning clear.

[6]

AVAILABLE
MARKS

6

- 16 Study the sleep audit of a GCSE PE student in **Table 3**. Answer the questions that follow.

AVAILABLE
MARKS

Table 3

	Hours slept	Quality of sleep	Nap periods
Monday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Good <ul style="list-style-type: none"> No phone 1 hour before sleep Cup of tea 30 minutes before bed 	None
Tuesday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Good <ul style="list-style-type: none"> Cup of tea 10 minutes before bed No phone 1 hour before sleep 	None
Wednesday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Not very good <ul style="list-style-type: none"> Stressed about controlled assessments No phone 1 hour before sleep 	None
Thursday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Very good <ul style="list-style-type: none"> No phone 1 hour before sleep 	None
Friday	Sleep at: 00:00 Woke at: 07:30 Total: $7\frac{1}{2}$ hours	Not good <ul style="list-style-type: none"> Cup of tea 30 minutes before bed Browsed on my phone throughout the night 	None
Saturday	Sleep at: 01:00 Woke at: 08:00 Total: 7 hours	Not good <ul style="list-style-type: none"> Cup of tea 30 minutes before bed Browsed on my phone throughout the night 	None
Sunday	Sleep at: 22:30 Woke at: 07:30 Total: 9 hours	Good <ul style="list-style-type: none"> Room too hot, woke to open window Cup of tea 30 minutes before bed 	None

- (a) Compare the sleep audit with government recommendations to identify **two strengths** of the student's sleeping pattern.

Example answers:

- During the week and on Sunday/5 out of 7 nights the student got the recommended number of hours of sleep per night.
- During the week the student had a consistent bed time routine of when they went to bed and woke up.
- Throughout the week the student had no nap periods; felt more tired at bedtime increasing likelihood of a good night's sleep.
- During the week and on Sunday/5 out of 7 nights the student did not use their phone 1 hour before going to bed.

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

Award **[1]** for a clear identification of a strength linked to recommendations.

(2 × [1])

[2]

- (b) Compare the student's sleep audit with government recommendations to identify **two areas for improvement**.

Example answers:

- On Friday and Saturday night the student does not get the 9 hours of recommended sleep.
- On Friday and Saturday night the student used a phone throughout the night/use of blue light before prevents the student's brain from releasing melatonin which will take the student longer to fall asleep.
- On four nights the student drank tea before bed, containing caffeine which is a stimulant.
- Sleeping environment – too warm

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

Award **[1]** for a clear identification of a weakness linked to recommendations.
(2 × [1]) [2]

- (c) Set a SMART objective for the student to promote better sleeping habits.

The objective set should be specific, measurable, attainable, relevant and time-bound.

Example SMART objectives:

- Within four weeks the student will go to bed at 23.00 at the weekend to get the recommended 9 hours of sleep every night. This will be agreed/recorded with their parents.
- Within four weeks the student will not use their phone one hour before bedtime every night. This will be agreed/recorded with their parents.
- Within four weeks the student will not drink any drinks containing caffeine within two hours of going to bed every night. This will be agreed/recorded with their parents.

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

Award **[1]** for setting an objective that includes two elements of the SMART principle for the person to maintain quality sleep.

Award **[2]** for setting a complete SMART objective for the person to maintain quality sleep. [2]

- (d) In the student's sleep action plan what **two** targets could be set to help achieve the SMART objective.

Example answers:

- Leave phone downstairs to charge
- Use an alarm clock instead of a digital device
- Read a book instead of browsing phone
- Have a cup of tea after school
- Have a glass of warm milk before bed instead of tea

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

Award **[1]** for linking action plan targets to set SMART objective to maintain quality sleep.

(2 × [1]) [2]

AVAILABLE
MARKS

8

- 17 State **three** examples of how parents could have a negative influence on their children's participation in sport.

Example answers:

- Parents act as role models; if they do not exercise the family may copy this behaviour.
- Parents can discourage family members from a healthy lifestyle by not providing information on sport clubs.
- Parents may not provide education on importance of participation in sport/physical activity.
- Parents may not encourage the family to take part in sport.
- Parents may not provide transport to training/competitions.
- Parents may not fund participation in sport, e.g. membership.
- Parents may not be able to afford for the family to participate in sport, e.g. membership, equipment, nutritious diet.
- Parent may put too much pressure on family members to win.
- Parents do not attend competitions.

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

Award **[1]** for clearly understanding parent's negative influence on a family's participation in physical activity and sport.

(3 × [1])

[3]

3

- 18 People with a disability are less than half as likely to participate in sports than non-disabled people. (DCAL Continuous Household Survey 2014/15).

Describe **two** ways in which Disability Sport NI promotes equality of access to sport for people with a disability in Northern Ireland.

Example answers:

- Disability Sport NI works to **improve the health and wellbeing** of people with disabilities and long-term health conditions through increased participation in community sport.
- Disability Sport NI **develops sporting talent** to lead the development of performance pathways/facilities/support programmes which enable athletes with disabilities to achieve higher levels of performance in their sport including continued Paralympic success.
- Disability Sport NI develop and deliver **training** to contribute to a sports and active recreation sector in Northern Ireland which is more inclusive of people with disabilities
- Disability Sport NI develop and deliver **access programmes** which will contribute to a sports and active recreation sector in Northern Ireland which is more inclusive of people with disabilities/more accessible facilities.
- Disability Sport NI **inspire and encourage** people with disabilities to become more active by providing information on the opportunities available, by **highlighting positive role models** and by **challenging negative attitudes** and misconceptions about people with disabilities.
- Disability Sport NI manage an effective well **governed organisation** with the capacity to lead the development of disability sport/**generate funding**.

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

Award **[1]** for basic description of the organisation's role in this area.

Award **[2]** for competent description of the organisation's role in this area.

(2 × [2])

[4]

4

- 19 Study the information in **Table 4** below regarding two leisure organisations. Answer the questions that follow.

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Table 4

Organisation 1		Organisation 2	
Belfast Leisure is funded and controlled by the local council.		The Little Gym is owned and run by four personal trainers.	
Opening hours: Mon to Fri 09.00–18.30 Sat and Sun 10.00–16.00		Opening hours: Mon to Sat 06.30–22.00 Sun 08.00–18.00	
Membership: £32 per month, Concessionary rate: £19 per month		Membership: £35 per month	
Mon-Fri timetable: 09.30 Spin 10.30 Yoga 12.30 Body Pump 16.30 Circuits	Sat-Sun timetable: 10.00 Spin 11.00 Yoga	Mon-Sat timetable: 06.45 Spin 07.45 Bootcamp 10.30 Yoga 11.30 Body Pump 17.30 Spin 18.00 Circuits 19.00 HITT 20.00 Body Combat 20.30 Pilates	Sun timetable: 08.30 HITT 10.00 Body Pump 11.00 Spin 15.00 Body Balance

- (a) State the sector that each leisure organisation belongs to and use specific evidence from **Table 4** to justify your choice.

Organisation 1 belongs to the **public sector** as it is **funded and controlled by Belfast City Council**; non-profit making; provide services for public use. Organisation 2 belongs to the **private sector** as it is **owned and run by four personal trainers for profit**; privately owned and funded.

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

Award **[1]** for identifying the correct organisation type

Award **[1]** for identifying an acceptable characteristic of each sector.

(4 × [1])

[4]

- (b) Using **specific** evidence from **Table 4**, explain which of the leisure organisations would be most suitable for a person who works Monday to Friday 09.00–17.30.

Organisation 2 would be most suitable as it has longer opening hours/during the week and at the weekend. This will allow the person to go to the gym before or after work. There is a greater variety of classes on offer.

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

Award **[1]** for one specific and correct explanation for choosing organisation 2.

(2 × [1])

[2]

- (c) Using **specific** evidence from **Table 4**, explain which of the leisure organisations would be most suitable for a person who receives income support.

Organisation 1 would be most suitable as it offers a concessionary/reduced membership fee for people who are unemployed; people who are unemployed have a reduced disposable income. Unemployed people are more flexible in the time they can use the facility/reduced opening hours should not affect the unemployed.

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

Award **[1]** for one specific and correct explanation for choosing organisation 1.

(2 × [1])

[2]

8

- 20** You have been asked to organise a 7-a-side football knockout competition in February for the local primary schools. The competition will run from 09.30–13.00 with eight primary schools entering. Your school will provide two pitches and equipment at no cost. The cost of running the competition includes:

- Two referees £40
- Trophy for winners and runners-up medals £25
- Refreshments £15

- (a) Use **Table 5** to create the draw and timetable for the 7-a-side football competition. You must include:

- The **order of play** to identify overall winner and runners-up (label schools A–H)
- The **pitch each game will be played on**
- The **timeline** for the competition
- The **duration of playtime for each game**

Example answer:

Time	Event	
09.30–10.00	Arrival and team registration	
10.00–10.30	Pitch 1	Pitch 2
	A v B	E v F
10.30–11.00	C v D	G v H
11.00–11.15	BREAK	
11.15–11.45	Winners of A/B v C/D	Winners of E/F v G/H
11.45–12.00	BREAK	
12.00–12.30	Final (A/B/C/D v E/F/G/H)	
12.30–13.00	PRESENTATION OF MEDALS	

Duration of time allocated per match is 30 minutes

- 10 minutes per half
- 5 minutes recovery
- 5 minutes contingency for additional time if required

Draw:

- First round: 8 teams therefore 4 matches to be played; 2 games on each pitch
- Second round: 4 teams therefore two matches to be played; 1 game on each pitch
- Final: 2 teams play each other to decide winner and runner-up position

Timeline:

- Overall the event has a suitable timetable to allow all games to be played within the agreed timeframe
- Allocating clearly the play time per interval, recovery time and additional time allowed if required
- Break periods being suitably distributed.

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

Draw:

Award **[1]** for the appropriate organisation of each round of matches. (3 × [1])

Award **[1]** for the appropriate number of matches on each pitch in round 1 and 2 (2 × [1])

Timeline

Award **[1]** for a moderate ability to create a timeline for a competition.

Award **[2]** for a competent ability to create a timeline for a competition.

Award **[3]** for a highly competent ability to create a timeline for a competition.

[8]

- (b) Calculate the entry fee per team with the aim to break even.

The entry fee per team will be **£10 per team**.

[1]

- (c) As the event manager it is important to plan for unforeseen problems, other than hazards, which could threaten the success of the competition.

Identify **three** problems that could arise and the action you would put in place to overcome this.

Example answers

- Teams wearing same colours; have bibs as backup plan
- Weather; organise an indoor facility as a backup plan
- Weather; have contact details to be able to communicate to postpone
- Missing equipment; have spare shin guards, footballs, goal posts etc.
- Team not turning up; have a backup plan to include byes or preliminary rounds
- Teams turn up late; be organised to be flexible to change timeline

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

Award **[1]** for identifying a specific threat to the event.

Award **[1]** for clearly explaining the contingency action that could be put in place.

(6 × [1])

[6]

15

Total

100

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