



Rewarding Learning

**General Certificate of Secondary Education
2022**

Physical Education

Paper 1

Factors Underpinning
Health and Performance

[G9771]

FRIDAY 20 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.

COVID-19 Context

Given the unprecedented circumstances presented by the COVID-19 public health crisis, senior examiners, under the instruction of CCEA awarding organisation, are required to train assistant examiners to apply the mark scheme in case of disrupted learning and lost teaching time. The interpretation and intended application of the mark scheme for this examination series will be communicated through the standardising meeting by the Chief or Principal Examiner and will be monitored through the supervision period. This paragraph will apply to examination series in 2021–2022 only.

		AVAILABLE MARKS
<p>1 Trachea: carries air from the nose, mouth and throat into the lungs; it has tiny hairs called cilia, which catch particles of dust that are removed through coughing. Bronchus: branch off into the left or right lungs. Alveoli: gaseous exchange gas/diffusion of oxygen and carbon dioxide. Diaphragm: forms the base of the thoracic cavity. It is a broad band of muscle that sits underneath the lungs, attached to the lower ribs and sternum; muscle that contracts to enlarge space in the chest cavity.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for correctly stating the function of the part of the respiratory system. (4 × [1])</p>	[4]	4
<p>2 Fig. 2 shows the respiratory process of inspiration. Fig. 3 shows the respiratory process of expiration.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for identifying the correct respiratory process. (2 × [1])</p>	[2]	2
<p>3 (a) Vital capacity is the maximum amount of air you can exhale/totally breathe out after maximal inspiration/fully breathing in.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for a clear definition of vital capacity.</p>	[1]	
<p>(b) (i) Athlete B</p> <p>Award [0] for an answer not worthy of credit. Award [1] for identifying Athlete B as an endurance athlete.</p>	[1]	
<p>(ii) Athlete B has a larger vital capacity, by two litres, reflecting a larger maximum capacity of the lungs. This will increase aerobic energy production because extra oxygen is delivered to the body and excess carbon dioxide is exported from the body.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for a basic understanding of how vital capacity affects participation in physical activities and sports. Award [2] for a competent understanding of how vital capacity affects participation in physical activities and sports. Award [3] for a thorough understanding of how vital capacity affects participation in physical activities and sports. (3 × [1])</p>	[3]	5

		AVAILABLE MARKS
<p>4 (a) Minute ventilation is the amount of air breathed in and out in one minute.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for a clear definition of minute ventilation. [1]</p> <p>(b) (i) Calculation A</p> <p>Award [0] for an answer not worthy of credit. Award [1] for identifying the correct minute ventilation calculation for a person when exercising. [1]</p> <p>(ii) Calculation A shows a person's minute ventilation when exercising as it is at least four times more than when the person is at rest. This is because the person is taking deeper breaths/greater volume and breathing faster/greater frequency of breaths per minute.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for a basic understanding of how minute ventilation is affected by participation in physical activities and sports. Award [2] for a competent understanding of how minute ventilation is affected by participation in physical activities and sports. Award [3] for a thorough understanding of how minute ventilation is affected by participation in physical activities and sports. [3]</p>	5	
<p>5 Pulmonary circuit , deoxygenated blood from working muscles – Superior Vena Cava – Right Atrium – Right Ventricle – Pulmonary artery – Lungs – Pulmonary vein – Left Atrium – Left Ventricle – Aorta – Systemic circuit, oxygenated blood to working muscles.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for an understanding of how the blood flows around the body during performances in physical activities and sports. (8 × [1]) [8]</p>	8	
<p>6 Catching a ball: somatic nervous system because it is a voluntary action of our body/it allows a person to consciously control the skeletal muscles. Eye dilation: autonomic nervous system because it is largely unconsciously controlled/gathers information from the internal environment.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for identifying the correct type of peripheral nervous system. Award [1] for a clear understanding of the parts of the PNS. (4 × [1]) [4]</p>	4	

- 7 (a) The main function of the skeletal muscle during performance in physical activities is to produce movement; as they contract to pull on bones.

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

Award [1] for a clear understanding of the function of skeletal muscle. [1]

- (b) (i) The hamstrings are the muscle group that contracts to flex the knee.

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

Award [1] for identifying the correct skeletal muscle to act as the prime mover. [1]

- (ii) The quadriceps are the muscle group that contracts to extend the knee.

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

Award [1] for identifying the correct skeletal muscle to act as the prime mover. [1]

- (c) Example answers:

- Muscles will contract more often. The higher rate of muscle contraction depletes energy stores – stimulates a higher rate of energy metabolism; muscles become tired, painful and may stop working due to build-up of lactic acid.
- Blood flow to muscles increases during exercise. It can increase by up to 25 times during especially demanding exercise. Myoglobin releases its stored oxygen to use in aerobic respiration. O₂ can now be diffused into the muscle from the capillaries more quickly due to the decreased O₂ concentration in the muscle.
- Muscle temperature rises/exercise generates heat.

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

Award [1] for a competent understanding of the short-term effects of exercise on the muscular system.

(3 × [1]) [3]

6

8 Example answers:

- Skeletal tissues become stronger by reinforcing the criss-cross matrix structure of the bones. This gives greater strength and flexibility to the bone tissue/decrease tissue breaks. The supporting connective tissue around the joints is also strengthened.
- Increased bone density – strength training and load bearing exercise that work against gravity will make bones become thicker/denser as a result of the demands placed on them by our bodies. This can increase mineral content, calcium and collagen, which can help reduce the risk of osteoporosis which is a degenerative condition; and make ligaments more flexible and the person will become more supple.
- Cartilage thickens, which aids the cushioning of the joints; reducing the friction between the bones.
- Tendons thicken and can withstand greater muscle force and therefore capable of greater power. This will help reduce the risk of injury.
- Increased synovial fluid – movement of the joints stimulates the secretion of synovial fluid therefore with regular exercise this becomes less viscous/more fluid and the range of movement at the joint increases as connective tissue around the joint improves its flexibility.
- Too much training or too intense training can cause overuse injuries. Cartilage can be worn away, stress fractures and tendon injuries can occur.

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

Level 1 ([1]–[2])

Overall impression – basic

Basic to moderate understanding of the long-term effects that can occur as a result of long-term optimal training on the skeletal 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 understanding of the long-term effects that can occur as a result of long-term optimal training on the skeletal 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 understanding of the long-term effects that can occur as a result of long-term optimal training on the skeletal 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

- 9 (a) Fig. 6 is an **active** leisure activity.
Fig. 7 is a **passive** leisure activity.

Award **[0]** for an answer not worthy of credit.
Award **[1]** for clear understanding of the types of leisure activities.
(2 × 1) [2]

- (b) Active leisure activities involve physical effort when you are participating e.g. yoga. Whereas passive leisure activities involve little or no physical effort e.g. gaming.

Award **[0]** for an answer not worthy of credit.
Award **[1]** for a basic understanding of the difference between active and passive leisure activities.
Award **[2]** for a clear and competent understanding of the difference between active and passive leisure activities. [2]

4

10

Example of active leisure facility	Active leisure industry category
Hotel	Hospitality
Restaurants	Catering
Library	Home-based leisure
Theatre	Arts and entertainment
Leisure Centre	Sports and physical recreation

Award **[0]** for an answer not worthy of credit.
Award **[1]** for a clear understanding of the active leisure industry category.
(5 × 1) [5]

5

- 11 Example answers:

- **Physical** well-being can be developed by regular exercise; healthy balanced diet; getting the recommended hours of quality sleep; avoiding alcohol; avoiding illegal drugs; avoiding smoking.

A benefit of maintaining physical well-being:

- improved levels of physical fitness and hypertrophy
- helps with weight control
- less likely to suffer from health conditions associated with sedentary lifestyles, e.g. coronary heart disease, Type 2 diabetes, cancer.
- improved mental health and social competence
- helps with rest and sleep
- increased self-confidence
- respiratory system will work more efficiently
- circulatory system will work more efficiently
- musculatory system will work more efficiently.

A negative consequence of neglecting physical well-being:

- increased risk of coronary heart disease
- increased risk of developing Type 2 diabetes
- increased risk of some cancers
- increased risk of osteoporosis
- increased cognitive decline/dementia
- loss of lean muscle tissue (atrophy)
- depression
- less efficient immune system.

- **Social** well-being can be developed by regular exercise with others; having meaningful relationships with others; mixing/communicating with others; caring for others.

A benefit of maintaining social well-being:

- confidence in meeting people and making friends
- self-belief in co-operating and working with others
- motivation to participate and compete in life

A negative consequence of neglecting social well-being:

- adverse effect on mental health
- loss in self-belief and self-esteem
- loss of confidence to embrace challenges
- poor physical health
- increased stress and anxiety
- feelings of loneliness/insecurity/unwanted
- depression
- cognitive decline/dementia

- **Mental** well-being can be developed by regular exercise; looking after your brain; reading, complete crosswords/puzzles; get the recommended hours of quality sleep; knowing yourself; meditation; goal setting.

A benefit of maintaining mental well-being:

- ability to cope with challenge
- increased resilience
- ability to function well with others
- an ability to cope with life's challenges
- effectively manage emotions
- increased self esteem
- the ability to view the world honestly, accurately and realistically.

A negative consequence of neglecting mental well-being:

- poor physical health
- sedentary lifestyle
- decreased motivation
- loss of appetite leading to poor nutritional intake
- difficult dealing with challenges and trauma
- high levels of stress/anxiety
- relationships can suffer
- feelings of insecurity
- depression
- inability to sleep/insomnia
- cognitive decline/dementia

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

Award **[1]** for a clear understanding how a key aspect of well-being could be developed.

Award **[1]** for a clear understanding of the benefits of maintaining a key aspect of well-being.

Award **[1]** for a clear understanding of the negative consequences of neglecting a key aspect of well-being.

(9 × [1])

[9]

9

		AVAILABLE MARKS
<p>12 (a) Eight to ten hours of quality sleep per night.</p> <p>Award [0] for an answer not worthy of credit. Award [1] for a clear understanding of the recommended hours of sleep for a 16-year-old. [1]</p> <p>(b) Example answers:</p> <ul style="list-style-type: none"> • <u>Environment right:</u> <ul style="list-style-type: none"> • Comfortable bed • No TV, games console • Dark bedroom i.e. no night light/use blackout blinds • Bedroom is quiet • <u>Have a good routine:</u> <ul style="list-style-type: none"> • Exercise regularly, to relieve stress from the day/tire you for sleep • Maintain a balanced, healthy diet • Avoid caffeine • Drink warm milk before bed • Avoid smoking • Avoid alcohol/substance misuse • Avoid large meals 2 hours before bed • Relax for 30 mins before bedtime/no blue light • Leave your phone out of the bedroom • Get up at the same time every day, even on weekends <p>Award [0] for an answer not worthy of credit. Award [1] for a clear understanding of the advice and recommendations on sleep. (2 × [1]) [2]</p>	3	
<p>13 Example answers:</p> <ul style="list-style-type: none"> • Age: people who start drinking at an early age are at a higher risk of physical dependence on alcohol. • Family history: the risk of alcoholism is higher amongst people who have a parent or close relatives who have had problems with alcohol. • Depression and mental health problems: people with mental health disorders can turn to alcohol as a coping mechanism. • Social and cultural factors: being around people who drink a lot could increase a person's risk of alcoholism; the media often glamorise drinking. • If someone finds alcohol too rewarding, and its overuse not punishing enough they have an incentive to keep drinking and no reason to stop. <p>Award [0] for an answer not worthy of credit. Award [1] for a clear understanding of why some people become addicted to alcohol. (3 × [1]) [3]</p>	3	
<p>14 Example answers:</p> <ul style="list-style-type: none"> • Hallucinogens can distort a person's sense of timing which would negatively affect their skill level, e.g. reaction time and co-ordination. • Hallucinogens can negatively affect a person's sight and hearing. This will impede their ability to read a game. <p>Award [0] for an answer not worthy of credit. Award [1] for a clear understanding of the effect of illegal drugs on physical performance. [1]</p>	1	

15 Example answers:

- Nicotine constricts the blood vessels, causing blood pressure to rise. This means the heart has to work harder (faster) than before to get the required oxygen to the muscles.
- Tar is a sticky brown substance that lies in the alveoli in the lungs. This means there is less surface area for diffusion of gases than before. Therefore, the person will have to breathe faster and deeper to get required oxygen to the working muscles.
- Tar carries irritants that narrow the bronchioles of the lungs. This means it is more difficult to breathe air into the lungs. Therefore, the person will have to breathe faster and deeper to get the required amount of oxygen to the working muscles.
- Tar carries irritants that produce more mucus. This means it is more difficult to breathe air into the lungs. Therefore, the person will have to breathe faster and deeper to get the required amount of oxygen to the working muscles.
- Carbon monoxide takes the place of oxygen in red blood cells, therefore oxygen supply is reduced from the tissues. This causes the heart to have to work faster to get the required oxygen to the muscles.

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

Award **[1]** for a competent understanding of the effect of smoking tobacco on physical performance.

Award **[2]** for a clear and highly competent understanding of the effect of smoking tobacco on physical performance.

(2 × [2])

[4]

4

16 (a) Example answers:

- The media's promotion of sport through its coverage may increase a person's interest to get involved in physical activity.
- The media promotes healthy living; the media runs fitness campaigns to encourage people to become healthy and fitter.
- The media helps to create sporting or health fitness role models which will encourage a person to want to act/look like them.
- There are specific channels dedicated to particular sports/health matters. These may help educate a person how to lead a more active and healthy lifestyle.
- Social media/YouTube/internet provide a wealth of information to educate a person on how to lead an active, healthy lifestyle.

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

Award **[1]** for a clear understanding of how the media positively affects lifestyle decisions about sustaining involvement in physical activity.

(2 × [1])

[2]

(b) Example answers:

- The media can reinforce cultural traditions by overexposing particular sports, e.g. football. This may discourage a person to participate in a minority sport or physical activity which goes against a particular stereotype.
- The media can reinforce unhealthy lifestyles, e.g. alcohol/illegal drugs/poor role-models.
- Too much contact with the media, e.g. scrolling social media, discourages an active, healthy lifestyle; lead to a person leading a sedentary lifestyle.
- Women's activity/disability activity under-represented in the media which creates stereotypes.
- Creation of negative body image as a person may compare themselves to how people manipulate images on social media.

Award [0] for an answer not worthy of credit.
Award [1] for a clear understanding of how the media negatively affects lifestyle decisions about sustaining involvement in physical activity.
(2 × [1])

[2]

AVAILABLE
MARKS

4

17 Example answers:

Strengths:

- The student eats breakfast every morning. Breakfast is considered the most important meal of the day as it is needed to kick start your metabolism after a long night's rest. Breakfast refuels the body for the busy day ahead. It is important that the student is choosing a high fibre, low sugar option to help boost their concentration and memory.
- The student rarely eats processed meat or chicken products which is excellent. These types of foods are often high in fat and salt. For a healthy balanced diet, it is recommended that the student eats these foods at most once a week.
- The student eats the average number of portions of bread, rice, potatoes, pasta and other starch foods, and this will usually meet their energy requirements. It is recommended we eat something from this food group at each mealtime i.e. approximately three to six portions each day. It is also a strength that the student opts for wholemeal varieties of these foods as they will be a good source of fibre.
- The student eats the recommended amount of protein which will be a good source of iron, vitamin B12 and zinc. Fish will be a good source of omega 3 fats, which are beneficial for heart health.

Areas for improvement:

- The student does not eat the recommended portions of fruit and vegetables each day. This is an area for improvement because fruit and vegetables are an important source of fibre and will contain lots of vitamins and minerals. Eating the recommended five portions of fruit and vegetables a day can help reduce the risk of some types of cancers and help prevent heart disease. It is important the student eats a variety of different colours of fruit and vegetables to get the full range of vitamins and minerals.
- The student eats too many portions of high fat, high sugar snacks a week. The student should aim to cut down on these types of foods as they offer little nutritional value. They can also contribute to weight gain.
- The student eats only one portion a day of milk and dairy foods which is below the recommended. The student should aim to meet the government recommendations of two to three portions a day, as they are good sources of vitamin D and calcium which can build strong bones and support other functions in the body such as blood clotting and muscle function.
- The student eats a takeaway meal once a week. They should aim for once a fortnight instead as they are high in saturated fat and salt. Too much fat can lead to weight gain, and too much saturated fat could increase the risk of heart disease.

NB max of six for identifying three suitable strengths and three suitable areas for improvement.

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

Level 1 ([1]–[4])

Overall impression – basic

Basic to moderate evaluation of the strengths and areas for improvement of the nutritional audit against the advice and recommendations on nutrition from the Public Health Agency.

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 ([5]–[8])

Overall impression – good

Moderate to competent evaluation of the strengths and areas for improvement of the nutritional audit against the advice and recommendations on nutrition from the Public Health Agency.

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 ([9]–[12])

Overall impression – excellent

A highly competent and detailed evaluation of the strengths and areas for improvement of the nutritional audit against the advice and recommendations on nutrition from the Public Health Agency.

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. [12]

12

18 (a) Example answers:

- Overall, this is not a healthy choice for the student’s dinner.
- The 20g of fat and 8g of saturated fat are both well above the recommended amounts, and are considered in the red, unhealthy zone.
- Although the sugar content for this meal is low, as it is 5g; and the salt level is in the medium category 1g.
- 25g for protein is good, and will help the student’s muscles grow and repair.

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

Award **[1]** for a basic evaluation of the information and data provided on food labelling and the Food Standards Agency traffic light system.

Award **[2]** for a moderate evaluation of the information and data provided on food labelling and the Food Standards Agency traffic light system.

Award **[3]** for a competent evaluation of the information and data provided on food labelling and the Food Standards Agency traffic light system.

Award **[4]** for a highly competent evaluation of the information and data provided on food labelling and the Food Standards Agency traffic light system. [4]

(b) Example answers:

- Ingredients
- Allergens
- Use by dates
- Best before dates
- Display until dates
- Storage instructions
- Calories
- % daily value of recommended intake
- Name of food

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

Award **[1]** for a clear understanding of information provided on food and drink labelling.

(2 × [1])

[2]

6

19 (a) Example answers:

	Student
1	A
2	H
3	B
4	F
5	D
6	C
7	E
8	G

	Student
1	G
2	E
3	C
4	D
5	F
6	B
7	H
8	A

Example answers:

- Justification of the order of student on the ladder:
- Students were placed on the ladder in rank order. The more skilful students were placed at the top of the ladder, as they have the best winning percentage.
- Students were placed on the ladder in rank order. The more skilful students were placed at the bottom of the ladder, so that they have to play to work their way up.

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

Award **[1]** for a basic understanding of creating a ladder competition for eight players.

Award **[2]** for a moderate understanding of creating a ladder competition for eight players.

Award **[3]** for a competent understanding of creating a ladder competition for eight players.

Award **[4]** for a highly competent understanding of creating a ladder competition for eight players. [4]

(b) Example answers:

- Players can only challenge another player one or two places above them on the ladder.
- Players must not refuse challenges.
- If a challenge is made, the game must be played within 7 days.
- All players must play at least six challenge games.
- If the lower-placed player wins the match, then the two players swap places on the ladder.
- If the lower-placed player loses, then they may not challenge the same person again without challenging another player first.
- If a higher-ranked player beats a lower-ranked player, positions on the ladder remain unchanged.
- A player that has been inactive for a month will be dropped by one rank on the first day of the following month.
- Once a challenge has been set no other challenge can be accepted until the game has been played.
- All games must be played within the agreed timeframe, e.g. 12 weeks.

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

Award **[1]** for a clear understanding of the rules required to plan effectively a ladder competition for eight players.
(4 × [1]) [4]

(c) The overall winner is the player at the top of the ladder at the end of the competition.

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

Award **[1]** for clear understanding of determining the overall winner in a ladder competition. [1]

Total

**AVAILABLE
MARKS**

9

100