

**GCSE**

**Physical Education**

**Summer 2009**

**Mark Scheme**

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**NORTHERN IRELAND GENERAL CERTIFICATE OF SECONDARY EDUCATION (GCSE)  
AND NORTHERN IRELAND GENERAL CERTIFICATE OF EDUCATION (GCE)**

**MARK SCHEMES (2009)**

**Foreword**

*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 16- and 18-year-old 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 a 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.

The Council hopes that the mark schemes will be viewed and used in a constructive way as a further support to the teaching and learning processes.



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*Rewarding Learning*

**General Certificate of Secondary Education  
2009**

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**Physical Education**

Paper 1

**[G7401]**

**THURSDAY 14 MAY, MORNING**

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**MARK  
SCHEME**

**Section A**

1 2 × [1]

- e.g. Unhealthy diet
- Taking illegal drugs
- Drinking excessive amounts of alcohol
- Not getting sufficient sleep
- Not exercising

[2]

AVAILABLE MARKS

2

2 3 × [1]

**Table 1**

Information	Carbohydrates	Fats	Proteins	Vitamins & minerals	Water	Dietary fibre
Dietary balance 25 – 30%		✓				
Classified as complex or simple	✓					
Cannot be digested						✓

[3]

AVAILABLE MARKS

3

3 Jack's body weight will **decrease**.

[1]

1

4 3 × [1]

**Table 2**

Information	Stimulants	Narcotic analgesics	Anabolic agents	Diuretics	Peptide hormones and analogues	Beta-blockers	Blood doping
Used to control anxiety						✓	
Used to get the same effect as adrenalin	✓						
Used to achieve rapid weight loss				✓			

[3]

3



			AVAILABLE MARKS				
5	e.g. Heart attack; leukaemia; arteriosclerosis; stroke; blood clotting.	[1]	1				
6	e.g. Depression or addiction.	[1]	1				
7	<p>3 × [1]</p> <p>e.g. The respiratory system will work more efficiently.  The circulatory system will work more efficiently.  The musculatory system will work more efficiently.  It can help with weight control.  It can help control negative habits such as smoking, drugs, excessive eating and excessive intake of alcohol.  It can help with rest/sleep. Exercise can make you physically tired and therefore help you to get to sleep at night.  It can help reduce the risk of some illnesses and diseases.  Reduce/control stress</p>	[3]	3				
8	<p>2 × [1]</p> <p>Energy can be produced:  Aerobically or  Anaerobically</p>	[2]	2				
9	(a) Muscular endurance	[1]					
	(b) Muscular strength	[1]	2				
10	<p>Up to [3]</p> <p>The line graph shows a repeating pattern. This would suggest that everything is set as it is in an interval training workout. [1]</p> <p>The work-time/work-rate/intensity is the same for each repetition (interval training), so the heart rate reaches around 180 bpm for each repetition. [1]</p> <p>The recovery time is the same after each repetition (interval training), so the heart rate drops to around 120 bpm during each recovery time. [1]</p>	[3]	3				
11	<p>2 × [1]</p> <p>Interval training for anaerobic fitness</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">Intensity</td> <td style="padding: 5px;">85–94% MHR</td> </tr> <tr> <td style="padding: 5px;">Work times</td> <td style="padding: 5px;">20–30 <b>OR</b> 40–50 seconds</td> </tr> </table>	Intensity	85–94% MHR	Work times	20–30 <b>OR</b> 40–50 seconds	[2]	2
Intensity	85–94% MHR						
Work times	20–30 <b>OR</b> 40–50 seconds						

12 2 × [1]

Table 3

Type of muscular fitness	Resistance	Number of repetitions	Number of sets	Recovery between sets
Muscular power	<u>3RM</u> (3–5RM)	3	4	3 minutes
Muscular endurance	20RM	<u>16</u> (15–20)	2	1 minute

[2]

2

13 2 × [1]

Aerobic energy production/aerobic endurance/cardio respiratory endurance **and** muscular endurance.

[2]

2

14 (a) Sally can use frequency to apply the principle of overload by doing **another walk** on another day. This would be four walks per week instead of three.

[1]

(b) Sally can use intensity to apply the principle of overload by walking **faster** on some of her walks. She could raise her % of maximum heart rate from 60–70 % of maximum HR.

[1]

(c) Sally can use time to apply the principle of overload by walking **longer** than 30 minutes on some of her walks, e.g. Walking for 40 minutes.

[1]

3

15 2 × [1]

e.g. You could change some or all of the exercises.

You could change the order in which the exercises are done

You could change from having a work-time to doing a set number of repetitions or vice versa.

[2]

2

16 (a) e.g. This tells Jenny that her aerobic exercise is effective; her heart is becoming more efficient or she is getting fitter.

[1]

(b) 3 × [1]

Jenny must use the same aerobic fitness tests on all occasions.

She must work at the same work rate on all occasions, or same condition each time. She must take her pulse rate at the same times after the tests on all occasions.

[3]

4

17 (a) Cardiac muscle moves **blood** around the body.

[1]

(b) Smooth muscle moves **food** through the digestive system.

[1]

2

18 4 × [1]

The heart develops **more coronary arteries**.

The heart becomes **larger** with **thicker** and stronger muscular walls.

The heart **chambers** also become **larger**.

The **arteries** become **larger** and **more elastic**.

**More red blood cells** are produced in the large bones of the body.

**More blood capillaries** develop in the muscles.

**More venules** develop in the muscles.

[4]

4

19 2 × [2]

A **lifestyle factor** such as diet is a factor over which **you have control**. [1] For example, you decide what you eat and how much you eat. [1]

A **genetic type factor** such as gender is a factor over which you **have no or limited control**. [1] For example, most people remain either male or female for the whole of their lives.[1]

[4]

4

20 (a) The candidate gives an example of a situation where the clothing or footwear would not be appropriate for the situation and could therefore be a hazard. [1]

(b) Up to [2]

The candidate gives a **sound recommendation** as to what Jane should wear in the situation so as **to minimise the risk of harm**. [1]

or

The candidate gives and explains a **sound recommendation** as to what Jane should wear in the situation so as **to minimise the risk of harm**. [2] [2]

3

21 (a) Up to [2]

A **forward roll** performed on a mat on a gym floor is a **closed skill** because there are **few, if any, factors outside the control of the performer**. [1]  
 The technique will be the same each time; the mat will be the same and in the same place and the performer will be unlikely to be affected by other people, adverse environmental or weather conditions. [1] [2]

2

(b) Up to [2]

A **long pass** to a team-mate in an **outdoor game** is an **open skill** because there are **many factors that are outside of the control of the performer** of which the performer must take account. [1]  
 The performer must take into account factors such as the positioning of his/her team-mates; the opposition; the ground conditions and the weather conditions. [1] [2]

2

22 3 × [1]

Table 4

Practising the throw-up for a tennis serve	<b>Part practice</b>
Practising visualising yourself performing the tennis serve	<b>Mental practice</b>
Practising in a game of tennis where no volleys are allowed	<b>Conditioned games practice</b>

[3]

3

23 Up to [4]

[1] for the answer if it shows **some understanding**.

[2] for the answer if it shows **fair understanding**.

[3] for the answer if it shows **competent understanding**.

[4] for the answer if it shows **extensive understanding**.

**Competition**

*This answer shows extensive understanding.*

Physical activities and sports provide the opportunities for competition and allow people to perform well. Competitions allow people to challenge themselves against others or against standards. People who are successful in competitions want to continue to show that they are the best and to compete at higher and higher levels. People who do not perform well in competitions want to prove that they can do better and they will work to improve their performances. Competitions challenge people to perform well.

or

**Success**

*This answer shows extensive understanding.*

It is said that success breeds success. People who are successful want to have continued success so they want to continue to perform well. Sport provides opportunities for people to be able to cope with success and failure. In competitive sport there are always winners and losers. Success can inspire people to improve their performances even further and losing can make them analyse what went wrong and work to improve their performances. Success inspires people to get to the top and to achieve their best.

[4]

4

**Section A**

**60**

## Section B

24 (a)  $8 \times [1]$ 

Table 5

<b>Aerobic fitness</b>	<b>James</b> A teenager who is unfit and grossly overweight, but is not embarrassed about it.	<b>Mary</b> A physically fit teenager who plays outdoor team sports.
Physical activity	e.g. Swimming [1]	Running [1]
Training method	Continuous steady pace [1]	Fartlek or Interval [1]
Intensity	Fairly hard or 55–75% MHR [1]	Hard to very hard or 75–95% MHR [1]
Time	20 minutes [1] (15–30 minutes)	20–60 minutes [1]

[8]

(b) 4 × [2]

Table 6

Aerobic fitness	Explanation for my choices for Mary
Physical activity	<p>[1] for a <b>sound explanation</b>. [2] for an <b>extensive and sound explanation</b>.</p> <p>I chose <b>running</b> because it is the type of exercise that is most likely <b>required for playing outdoor team sports</b>. It matches up to the demands of the sport, therefore it is <b>appropriate</b> or <b>specific</b>.</p>
Training method	<p>[1] for a <b>sound explanation</b>. [2] for an <b>extensive and sound explanation</b>.</p> <p>I chose <b>fartlek or interval</b> because <b>outdoor team sports demand bursts of work at high intensities</b>. Fartlek or interval training provide this and are therefore <b>appropriate</b> or <b>specific</b>.</p>
Intensity	<p>[1] for a <b>sound explanation</b>. [2] for an <b>extensive and sound explanation</b>.</p> <p>I chose <b>75–95% MHR or hard to very hard intensity</b> because at times in the game Mary will have to <b>sustain high intensity work</b> and at other times she will have to <b>work flat out for a short period of time</b>. <b>Fartlek or interval</b> training can be set-up to <b>allow this</b> to happen.</p>
Time	<p>[1] for a <b>sound explanation</b>. [2] for an <b>extensive and sound explanation</b>.</p> <p>The fartlek or interval training workout could last between 20–60 minutes because the intensity of the training is high, and therefore 20–40 minutes is long enough. As this is the length that a match would last, so 40–60 minutes would be suitable.</p>

[8]

16

- 25 (a) (i) Up to [2]  
[1] for an answer that shows some understanding of why the principle is important.  
[2] for an answer that shows competent understanding of why the principle is important.

*This answer shows competent understanding.*

The principle of **specificity** is important because the **effects of training** are **very specific**. If you **want to improve** your physical fitness for a particular event, sport or position within a sport, then **your training and training methods must match**, as much as possible, the **physical fitness demands of the event**, sport or position within the sport. [2]

- (ii) Up to [6]  
Up to [2] for a detailed description of the physical fitness demands of a chosen event, sport or position within a sport.  
Up to [2] for matching an appropriate type of exercise for a chosen event, sport or position within a sport.  
Up to [2] for identifying the relative importance of components of physical fitness to the physical fitness demands of the chosen event, sport or position within a sport.

*For example, the following answer would merit [6] marks.*

The physical fitness demands of a marathon require the athlete to be able to **run** at a **steady pace** for anything from **2 hours 10 minutes up to 4 hours**. [2]

Therefore to apply the principle of specificity effectively to a training programme, people **must run** as their main type of exercise to match the demands of the marathon [2] and they **must develop** their **aerobic energy production and their muscular endurance**, because these match the demands of the marathon. [2] [6]

- (b) (i) Up to [2]  
[1] mark for an answer that shows some understanding of why the principle is important.  
[2] marks for an answer that shows a competent understanding of why the principle is important.

*This answer shows competent understanding.*

The principle of **variety** is important because you are **less likely to become** psychologically and physically **bored** and **less likely to stay on a plateau without improving** if a variety of training methods and venues are used. [2]



(ii)  $3 \times [2]$

In training for a marathon, people must be specific with the type of exercise they do and concentrate their training on the appropriate components of physical fitness for the event. Therefore, to apply the principle of variety to such a programme, they must look for other ways to achieve this. Examples for this situation would be to:

- use a variety of training methods. In addition to using continuous steady pace training, fartlek training could be used on occasions as could interval training where the work for each repetition could be running up a hill. [2]
- use different venues for the training. Variety could be introduced by going to different areas and environments, for example, runs could be in the country, at the beach, on trails, in areas of natural beauty, all to provide variety. [2]
- train at different times in the day over the weeks. For example, people could use early morning, lunch-time, afternoon or evening slots to do their training. [2]
- train alone and to train with different people for different training sessions. Sometimes it is good to train alone; at other times, it is good to have some competition; sometimes it is good to be part of a group, and sometimes it is good to train with people you do not know. This all helps you remain fresh. [2]

[6]

16

26  $4 \times [2]$

Evidence to support the allegation that Liam failed to understand the learning intention and that his organisation and teaching were poor.

Learning intentions

In the first week he does not even mention the learning intention and in the following weeks the learning intention is not made clear. He just asks them to do widths or lengths to improve their breaststroke. This is poor. [2]

Assessment of performance

At no stage does Liam assess (live observations or recordings) each person's technique at breaststroke. It is not done at the beginning, during the five weeks or at the end. In week five he tests the group; however, this test does not assess their breaststroke technique. It is more a test of fitness. This is poor. [2]

Teaching

There is no evidence to show that Liam actually taught the group anything. There is no mention of him giving any guidance (visual, verbal or manual) on how to swim the breaststroke with good technique. This is poor. [2]

Practices

Liam did not use any practices to help the group develop their technique (part or whole-part-whole, etc.). All he got them to do was swim breaststroke, as best they could, for five or ten minutes. There was no feedback given. There was no breakdown of the stroke where they would practise their leg kick, arm action, breathing, etc. This is poor. [2]

### Feedback

There is no evidence to show that Liam gave any of the group feedback (knowledge of performance) on how well they were swimming the breaststroke. If individuals did not know what they were doing well and what areas they needed to develop, then it would be difficult for them to improve their breaststroke technique. This is poor. [2]

### Organisation

Liam did not break down the 30 mins to allow the technique of breaststroke to be taught. [2]

Liam did not do 30 mins of teaching breaststroke to be in any of the sessions.

There is no evidence to show that Liam took into account the range of abilities that might have been in the group. Everyone was just asked to swim, firstly three and four times for 5 minutes non stop and then twice for 10 minutes non stop.

Beginners would be unlikely to be able to do this, so this was likely to have been poor organisation of the 30 minutes. [2]

[8]

### Section B

QWC

Total

AVAILABLE  
MARKS

8

40

5

105

Marks are to be allocated to QWC in accordance with the following criteria.

Performance Level	Criteria	Marks
Threshold	The candidate's quality of written communication is basic. They use a limited range of specialist terms and their spelling, punctuation and grammar are weak.	1
Intermediate	The candidate's quality of written communication is moderate to good. They use a range of specialist terms with facility and their spelling, punctuation and grammar are reasonably good.	2, 3
High	The candidate's quality of written communication is very good. They use a wide range of specialist terms adeptly and their spelling, punctuation and grammar are almost faultless.	4, 5



