



## **General Certificate of Education**

## **Health and Social Care**

**8621/8623/8626/8627/8629**

**HC13**

## **Mark Scheme**

*2010 Specimen Paper*

Mark schemes are prepared by the Principal Examiner and considered, together with the relevant questions, by a panel of subject teachers. This mark scheme includes any amendments made at the standardisation meeting attended by all examiners and is the scheme which was used by them in this examination. The standardisation meeting ensures that the mark scheme covers the candidates' responses to questions and that every examiner understands and applies it in the same correct way. As preparation for the standardisation meeting each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed at the meeting and legislated for. If, after this meeting, examiners encounter unusual answers which have not been discussed at the meeting they are required to refer these to the Principal Examiner.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

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### Quality of written communication

The quality of written communication is assessed in all assessment units where candidates are required to produce extended written material. Candidates will be assessed according to their ability to:

- Select and use a form and style of writing appropriate to purpose and complex subject matter
- Organise relevant information clearly and coherently, using specialist vocabulary when appropriate
- Ensure that text is legible, and that spelling, grammar and punctuation are accurate, so that meaning is clear.

The assessment of quality of written communication must be included in questions **2(a)** and **4(b)(iii)**

#### Question 1

- (a)(i)  $VO_2$  max (1)  
( $O_2$  uptake) and use ml/millilitre per minute (1)  
per kilogram/kg of body weight (1)

3 marks

No response worthy of credit

0 marks

- (a)(ii) Ref to:  
Karin's external respiration AW/breathing/vital capacity/lung capacity/oxygen intake improving (1)  
lung surface area increasing (1)  
to increase  $O_2$  diffusion (1)  
into blood (1)  
more effective transport to cells (1)  
through increased blood carrying capacity AW (1)  
less stress on heart muscle (1)  
improves stamina AW (1)  
improved  $O_2$ /metabolism/use of  $O_2$   
respiration AW in cells/tissues/muscles (1)  
as muscles increase in size/become more effective (using  $O_2$ ) (1)  
faster  $O_2$  debt recovery AW (1)

max 7

7 marks

No response worthy of credit

0 marks

- (b) Ref to:  
stamina (1)  
maximum strength (1)  
dynamic strength/power (1)  
Allow strength for 1 mark if mobility (1) flexibility (1)  
No other mark.

Max 3

3 marks

No response worthy of credit

0 marks

(c) Ref to:

- Karin may have – improved concentration span (1)
- better decision-making/be clearer thinking AW (1)
- have reduced/maintain blood pressure at ‘normal’ levels AW (1)
- improved sleep (1)
- less anxiety/worry AW more relaxed/calmer(1)
- help prevent indigestion (1)
- palpitations (1)
- ‘muscular’ aches/pains (1)
- Ref to improving physical/intellectual/emotional/social aspects of stress (1)
- Ref to endorphins/serotonin/enkephalins/chemicals in brain (1)
- Causing ‘feel good’/mood changes AW (1)

max 7

7 marks

No response worthy of credit

0 marks

## Question 2

(a)

Answers are likely to point out that some effects of ageing can be delayed, but not completely prevented. Effects discussed are likely to include reductions in lung function/respiratory capacity, reduction in cardiac output, increase in blood pressure, hardening of arteries, reductions in muscle strength, stamina, flexibility and mobility, reduction in density of bone tissue, impaired sleep patterns. Accept other relevant effects.

Mark ranges

0 marks

No response worthy of credit.

1-3 marks

Answers that show some relevant knowledge of effects of ageing, but which are brief, very inaccurate (for example by overstating the benefits of exercise) or which do not address the question directly.

Candidates who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top of the mark band.

Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom of the mark band,

4-6 marks

Answers that address the question directly, give a reasonably coherent argument illustrated with some appropriate reference to effects of aging. These answers may lack detail or be one-sided (i.e. only consider the benefits). There is some relevant technical terminology.

Candidates who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top of the mark band.

Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom of the mark band,

7-9 marks

Answers that present coherent and well-structured arguments for both the benefits and limitations of the effectiveness of exercise and which illustrate these with appropriate reference to a range of effects of ageing. Relevant technical terminology is correctly used.

Candidates who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top of the mark band.

Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom of the mark band,

(b) Ref to any 3 of:

be checked medically or take expert advice/wear appropriate clothing or footwear/perform warm up programme/obtain correct monitoring equipment.

Not warm up and cool down.

Mark first 3 attempts

6 marks

No response worthy of credit

0 marks

Linked reasons include: to prevent overexertion/accident – injury/maintain comfort/allow movement to be unrestricted/keep warm – cool/lose sweat.

(c) Ref to:

regular exercise suppresses appetite (1)

lowering risk of overeating/weight gain (1)

eat less (1)

possible role of appestat (1)

in hypothalamus/brain (1)

receiving information from blood (1)

regular exercise improves appestat function AW (1)

reducing psychological desire AW for food (1)

max 5

5 marks

No response worthy of credit

0 marks

**Question 3**

- (a)(i) Ref to:  
 all three individuals feel increased effort over the 5 minutes AW (1)  
 broadly similar effort levels at start/1 min (1)  
 Person A and Person C have similar pattern of effort (1)  
 may be similar fitness level (1)  
 Person B finds exercise less demanding compared to other two (1)  
 may be fitter AW (1)  
 Not – 1, 2, 3 in order i.e. B – C – A.  
 Allow 'numerical' example e.g. effort levels rise for A/C – 5 points  
 over 5 minutes (1)  
 Person B only 2 point rise (1)  
 or similar comparison points for max 2 marks max 6  
 6 marks  
 No response worthy of credit 0 marks
- (a)(ii) Ref to strength: gives overall perception of effort (not one aspect)/  
 shows progression in effort level (1) 1 mark  
 Ref to limitation: subjective measure AW/perceptions may vary –  
 not good for comparisons between individuals  
 Not easy/quiet 1 mark  
 No response worthy of credit 0 marks
- (b)(i) Ref to:  
 use spirometer (1)  
 to measure amount of air AW exhaled/inhaled (1)  
 in single breath (1) 3 marks  
 No response worthy of credit 0 marks
- (ii) Ref to:  
 weight in kilograms kg (1)  
 divided (1)  
 by height in metres squared (1) 3 marks  
 No response worthy of credit 0 marks
- (c)(i) Person A is overweight/not very overweight/obese(1) 1 mark  
 No response worthy of credit 0 marks
- (ii) Person B is lean/underweight (1) 1 mark  
 No response worthy of credit 0 marks
- (iii) Ref to:  
 Take resting pulses (1)  
 perform identical exercise AW (1)  
 record pulse after exercise stopped (1)  
 at set intervals or e.g. (1)  
 until pulse returns to rest (1)  
 the faster the recovery the fitter the person or vice versa (1)  
 max 4 4 marks  
 No response worthy of credit 0 marks

**Question 4**

- (a) Ref to:  
 work – family-time commitments (1)  
 overcome by walking to work/taking part in physical play with family/doing housework tasks at home (1)

Ref to: costs – or examples of fees etc. (1)  
 do free activities – example walk/ jog/leisure centres (1)

- Ref to: low skill- fitness levels or self-conscious/embarrassed to physical appearance (1)  
 join beginners group/exercise with friend/exercise at home (1)

- (1) Ref to: lack of local facilities or example (1) exercise at home/do free activity or example

Ignore transport unless qualified with facilities location.

Ref to cultural/religious/beliefs (1)

single sex gym sessions/home DVDs

max 6

6 marks

No response worthy of credit

0 marks

- (b)(i) Ref to: heart disease AW/cerebral infarction (stroke)/type 2 diabetes/obesity

max 2

2 marks

No response worthy of credit

0 marks

- (ii) Ref to: type 1 diabetes/osteoporosis/hypertension

Allow diabetes/obesity

max 2

2 marks

No response worthy of credit

0 marks

(iii) Answers are likely to recognise the benefits and limitations of exercise programmes. Benefits include weight control, rehabilitation following illness, maintaining the fitness/health of body systems.

Limitations include the risks of injury where programmes are not properly designed for particular clients, and the inability of exercise to completely prevent disease or to benefit some disease conditions.

Answers are likely to be illustrated with examples of specific diseases and how these might be affected by exercise, and with information about factors that need to be taken into account when designing exercise programmes, such as: level of demand, timings, number of repetitions, age and fitness level of the client.

Accept other valid points, for example appropriate reference to effects of exercise on mental health.

Mark ranges

0 marks

No response worthy of credit.

### 1-3 marks

Answers that show some relevant knowledge of the possible impact of exercise on disease but which are brief, very inaccurate or which do not address the question directly (for example by not linking effects of exercise on disease with exercise programmes).

Candidates who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top of the mark band.

Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom of the mark band,

### 4-6 marks

Answers that address the question directly, give a reasonably coherent argument illustrated with some appropriate reference to features of exercise programmes and their possible effects on disease.

These answers may lack detail or be one-sided (i.e. only consider the benefits). There is some relevant technical terminology.

Candidates who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top of the mark band.

Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom of the mark band,

### 7-10 marks

Answers that present coherent and well-structured arguments for both the benefits and limitations of the exercise programmes and which illustrate these with appropriate reference to fitness and disease conditions. Relevant technical terminology is correctly used.

Candidates who deploy appropriate knowledge and understanding and display higher QWC skills should be rewarded at the top of the mark band.

Conversely, those who display some confusion and weakness in QWC supporting knowledge and understanding should be placed at the bottom of the mark band,



## GCE Health and Social Care

<b>Examination Series: (Jan/June)</b>	<b>June</b>
<b>Year:</b>	<b>2008</b>
<b>Unit:</b>	<b>HC13</b>

Questions	Assessment Objectives				Total
	A01	A02	A03	A04	
1(a)(i)	3				3
1(a)(ii)		4		3	7
1(b)	3				3
1(c)			7		7
2(a)				9	9
2(b)	3		3		6
2(c)		5			5
3(a)(i)			6		6
3(a)(ii)		2			2
3(b)(i)	3				3
3(b)(ii)	3				3
3(c)(i/ii)			2		2
3(c)(iii)		4			4
4(a)	3			3	6
4(b)(i)		2			2
4(b)(ii)		2			2
4(b)(iii)				10	10
<b>Totals</b>	<b>18</b>	<b>19</b>	<b>18</b>	<b>25</b>	<b>80</b>
<b>Percentages</b>	<b>22.25</b>	<b>23.75</b>	<b>22.5</b>	<b>31.25</b>	<b>100</b>