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ASSESSMENT and QUALIFICATIONS ALLIANCE

## General Certificate of Education

# Health and Social Care 8621/8623

## HC13

# Mark Scheme:

*2008 examination – January series*

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.

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**HC13 JANUARY 2008 MARK SCHEME**

1ai) Maximal oxygen uptake/maximal aerobic power/$VO_2$ max — 1 mark

aii) Any 3 of: Majid's age/genetics AW/(absence/presence respiratory) disease
Allow amount of exercise performed
Not fitness — max 3 — 3 marks

b) Ref to Michael developing 'feeling good' AW(1) with raised self esteem/ self concept (1) raised self confidence (1) ref to chemical (1) stimulated/ released into brain (1) by nerve endings (1) allow named example endorphins/endomorphins/enkephalins/serotomin (1) stimulating motivation AW/ mood changing (1)
max 7 — 7 marks

c) 1. Ref to: ability of neuro muscular system AW (1) to overcome resistance (1) with high speed of contraction (1) allow suitable example – throwing/jumping/sprinting (1) — max 3 — 3 marks

2. Ref to: endurance AW (1) muscles (1) withstanding fatigue AW (1) — 3 marks

3. Ref to: ability to move AW (1) dependent on strength (1) stamina (1) flexibility (1) speed (1) balance (1) — max 3 — 3 marks

Total 20 marks

2ai) Ref to warm downs – preventing discomfort AW/soreness/stiffness (1) maintaining elevated/gradually reduce heart rate AW (1) allows lactic acid (1) to be oxidised/metabolic rate maintained (1) reducing blood pooling (1) in veins (1) prevents dizziness (1) allows muscle temperature to drop slowly (1) preventing muscle damage (1) allows mental relaxation (1) gradually reduce ventilation rate AW (1) — max 9 — 9 marks

2aii) Ref to – medical checks/expert advice (1) to prevent over exertion/ injury (1) — 2 marks

Ref to – selecting appropriate clothing/footwear (1) to prevent accidents/ maintain comfort/ease of body to keep warm, lose heat/allow ease of movement/sweat loss (1) — 2 marks

Ref to – selecting appropriate monitoring equipment (1) to prevent over exertion/to work within personal limits (1) — 2 marks

max 2 + 2 — 4 marks

b) Ref to – (Energy equation) food intake AW (1) supplies energy (1) generally from carbohydrate/fat (1) convert to glucose (1) energy "used up by" regular exercise AW (1) in respiration of tissues (1) to allow movement (1) ref to joules /calories (1) balance – weight maintained (1) input greater than output or vice versa weight positive balance AW gained (1) ref exercise increases metabolic rate (1) easier to maintain weight/achieve negative balance AW (1) max 7 — 7 marks

Total 20 marks

3ai) Ref to: Person A outside 'normal' range AW/below/very fit
Person B in normal range (1)
Person C in normal range (1)
Person B/Person C may be less fit/fitter (1)
max 3 3 marks

aii) Ref to: Person B least fit (1) as pulse rises most (1) does not return to resting rate after 9 minutes AW (1)
Persons A/C fitter than B (1) since returns pulse to resting rate by 9 minutes (1)
Persons A/C similar level of fitness (1)
Allow Person A lowest rise/rate + 25/27 bpm (1)
Person B highest rise/rate + 43/47 bpm (1)
Person C 'mid' rise/ + 28/30 bpm (1) max 6 6 marks

bi) Ref to: while person exercises AW (1) asked/records how hard/how much effort exerted AW (1) overall effort at set intervals (1) on scale 0-10/0-20/6-20 or similar (1) where 0/6 is zero or little effort/10/20 is maximum effort (1) max 4 4 marks

bii) Ref to: as it is a subjective measure AW (1) difficult to compare values AW (1) allow example – one person's score of 6, equal to another's score of 8 for the same effort (1) same person's perceptions may also change (1)
Ignore standardised. 3 marks

c) Ref to: when exercising in groups/teams/with others (1) opportunity to <u>interact</u> socially (1) meet new people AW/widen social circle (1) form new friendship groups (1) develop social skills (1) max 4 4 marks

<u>Total 20 marks</u>

4a) Ref to barriers: full time work (at computer) (1) long way from facilities (1) ref husband (1) not good at sports/physical games (1) max 3 3 marks

May be overcome by: exercise on way/or at work (1) exercise at home – doing housework (1) (re not good sports) exercise with friend/try beginners class (1) (family) – encourage husband to exercise together (1) linked max 3 3 marks

b) Any 2 of heart attack/disease/atherosclerosis/cerebral infarction AW/ type 2 diabetes/obesity
Not angina max 2 2 marks

c) Ref to: aims of the programme/suitability of programme/examples of suitable exercises – weight bearing or not/low impact/need to consider safety features/ good practice/barriers/aerobic –muscular aspects of fitness/monitoring methods/ disease or disorders. These points can be drawn from across the other six sub sections.

Band 1 - 1-4 marks
Generally vague responses lacking in detail and depth, possibly covering only 1-2 different aspects for 3/4 marks should cover and least three different aspects in a little detail.

Band 2 - 5-8 marks
More detailed and wider ranging responses. Details explaining how and why aspects are important. For 7-8 marks should cover at least five different aspects.

Band 3 - 9 – 12 marks
Very detailed responses, covering much of possible range. If more limited in range coverage, will have good physiological detail of how and why aspects are important. For 11/12 marks should cover at least seven different aspects. 12 marks

Total 20 marks

Paper total 80 marks