

General Certificate of Education  
January 2008  
Advanced Level Examination



**HEALTH AND SOCIAL CARE**  
**Unit 13 The Role of Exercise in Maintaining Health  
and Well-being**

**HC13**

Thursday 24 January 2008 9.00 am to 11.00 am

**For this paper you must have:**

- a 12-page answer book.

Time allowed: 2 hours

**Instructions**

- Use blue or black ink or ball-point pen.
- Write the information required on the front of your answer book. The *Examining Body* for this paper is AQA. The *Paper Reference* is HC13.
- Answer **all** questions.
- Do all rough work in the answer book. Cross through any work you do not want to be marked.

**Information**

- The maximum mark for this paper is 80.
- The marks for questions are shown in brackets.
- You will be marked on your ability to use good English, to organise information clearly and to use specialist vocabulary where appropriate.

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Answer **all** questions.

There are 20 marks for each question.

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- 1** Majid is physically fit. His body takes in and uses a lot of oxygen per minute per kilogram of body weight. He also has good dynamic strength, stamina and mobility.
- (a) (i) What name is given to the measure of fitness, which is the maximum amount of oxygen taken in and used per minute per kilogram of bodyweight? *(1 mark)*
- (ii) Suggest **three** factors other than gender which will affect a person's ability to take in and use oxygen. *(3 marks)*
- (b) Explain how regular exercise may help Majid develop a positive mental attitude. *(7 marks)*
- (c) Explain what is meant by:
- (i) dynamic strength *(3 marks)*
- (ii) stamina *(3 marks)*
- (iii) mobility. *(3 marks)*
- 2** Before starting strenuous exercise it is advisable to perform a warm-up programme. After exercise a warm-down is equally important.
- (a) (i) Explain how a warm-down programme is beneficial. Refer to physiological processes in your answer. *(9 marks)*
- (ii) Suggest **two** other principles of good practice and safety it is important to follow before starting exercise. Give **one** different reason why each is important. *(4 marks)*
- (b) Explain how regular exercise affects the energy equation in relation to weight control. *(7 marks)*

- 3 The following data were recorded from three healthy female 23-year-old adults before, during and after an identical step exercise.

Exercise	Pulse Rates (bpm)		
	Person A	Person B	Person C
At rest	55	66	70
At 1 minute	58	71	73
At 2 minutes	65	82	80
At 3 minutes	72	94	88
At 4 minutes	80	109	98
Exercise stopped	-----	-----	-----
At 5 minutes	82	113	100
At 6 minutes	70	101	88
At 7 minutes	59	89	78
At 8 minutes	56	79	73
At 9 minutes	55	71	70

- (a) (i) What conclusions can be drawn from the pulse rates of the three females at rest?  
(3 marks)
- (ii) What conclusions can be drawn about the relative fitness of the three females from their pulse rates during and after exercise?  
(6 marks)
- (b) Exercise data may also be obtained using perceived exertion scales.
- (i) Outline how a perceived exertion scale is used.  
(4 marks)
- (ii) Briefly explain the limitations of using a perceived exertion scale to compare the fitness of different individuals.  
(3 marks)
- (c) Briefly outline the social benefits of regular exercise.  
(4 marks)
- 4 Cassandra does not exercise. She works full time using a computer in the family business. She lives a long way from any gym, swimming pool or leisure centre. She likes to spend free time at home with her husband. Cassandra is not good at sports or physical games but enjoys crosswords and number puzzles.
- (a) Identify **three** different barriers to regular exercise in Cassandra's life. For each barrier suggest **one** different way to overcome it.  
(6 marks)
- (b) Suggest **two** different diseases Cassandra may develop due to lack of regular exercise.  
(2 marks)
- (c) Discuss what should be considered when recommending exercise programmes for different clients.  
(12 marks)

**END OF QUESTIONS**

**There are no questions printed on this page**