General Certificate of Education
June 2008
Advanced Level Examination

HEALTH AND SOCIAL CARE   **HC13**
**Unit 13 The Role of Exercise in Maintaining Health
             and Well-Being**

Friday 6 June 2008   1.30 pm to 3.30 pm

For this paper you must have:
- a 12-page answer book.

Time allowed: 2 hours

Instructions
- Use black ink or black 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.

HC13

Answer **all** questions.

There are 20 marks for each question.

1   Karin is improving her aerobic fitness by taking regular aerobic exercise.

   (a)   (i)   What is the measurement of aerobic fitness and in what units is it measured?

(3 marks)

         (ii)   Explain how regular aerobic exercise will improve Karin's long-term aerobic fitness. Refer to physiological processes in your answer. *(7 marks)*

   (b)   Suggest **three** different aspects of muscular fitness which may be improved by regular exercise. *(3 marks)*

   (c)   Describe how regular exercise may help Karin control stress. *(7 marks)*

2   Regular exercise may be effective in combating ageing.

   (a)   Explain, with reference to physiological processes, how regular exercise can do this.

(9 marks)

   (b)   Suggest **three** different safety precautions that are necessary before starting exercise. Give **one** different reason why each safety precaution is important. *(6 marks)*

   (c)   Describe the effects of regular exercise on appetite. *(5 marks)*

3   The following data were obtained during identical exercise performed for five minutes by three adult males.

	Perceived Exertion Scale (0–10) 0 – no effort 10 – maximum effort		
	Person A	**Person B**	**Person C**
Exercise starts			
1 minute	3	3	2
2 minutes	4	3	3
3 minutes	6	4	5
4 minutes	7	4	6
5 minutes	8	5	7
Exercise stops			

   (a)   (i)   What conclusions can be drawn from the data in the table? *(6 marks)*

         (ii)   Give **one** strength and **one** limitation of using perceived exertion scales. *(2 marks)*

(b) Tidal volume and Body Mass Index (BMI) were also calculated for the three males over the five minute exercise period.

    (i) Explain how tidal volume is calculated. *(3 marks)*

    (ii) Explain how Body Mass Index (BMI) is calculated. *(3 marks)*

(c) Person A's BMI was calculated to be 27, while Person B's was 17.

    (i) What does Person A's BMI result indicate? *(1 mark)*

    (ii) What does Person B's BMI result indicate? *(1 mark)*

    (iii) Outline how exercise pulse rates can be used to compare the fitness levels of two individuals. *(4 marks)*

4 (a) Suggest **three** common barriers that may prevent people from taking part in regular exercise. For each barrier suggest **one** different way it may be overcome. *(6 marks)*

(b) (i) Name **two** different diseases that may be prevented by regular exercise. *(2 marks)*

    (ii) Name **two** different diseases that may be regulated by regular exercise. *(2 marks)*

    (iii) Explain how regular exercise can help prevent **or** regulate disease. *(10 marks)*

END OF QUESTIONS

There are no questions printed on this page