



**General Certificate of Education**

**Health and Social Care  
8621/8623**

**HC05**

**Mark Scheme**

*2008 examination – January series*

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**HCO5 JANUARY 2008 MARK SCHEME**

1 (a) (i)

Ref to Alex's growth restricted/affected (1) body not repairing quickly AW (1) anti body production reduced/immune system impaired AW (1) body tissue not maintained effectively (1) hormone production less (1) max 3 3 marks

(1) (a) (ii)

Ref to Alex: increased risk of heart disease (1) in later life (1) through increased blood cholesterol/low density lipoproteins/LDL/atherosclerosis or description (1) increased risk of obesity/weight gain (1) high blood pressure (1)

Ignore diabetes

max 3 3 marks

(1) (b) (i)

Any 2 of: meat or named examples/milk/eggs/cheese/fish/nuts/beans/soya max 2 2 marks

(1) (b) (ii)

Whole milk AW/cheese/butter/cream/biscuits/pastries AW/coconut/palm oil/chocolate

Allow named meat examples but not offal or poultry.

Allow red meat.

1 mark

(1) (c) (i)

Hydrogen (1) oxygen (1)

2 marks

(1) (c) (ii)

Nitrogen (1) allow sulphur/phosphorus max 1

1 mark

(1) (c) (iii)

Ref to saturated fats are those where: carbon atoms (1) connected to hydrogen atoms (1) cannot accept any more AW (1) Allow reverse third point if from unsaturated standpoint. Allow ref to double bond.(1)

3 marks

Watch for contradictions between explanations and diagrams e.g. re double bonds.

Total 15 marks

2 (a) (i)

Ahmed does not have enough Vit B1 (1)

Ahmed does not have enough Vit C (1)

Ahmed has enough/very nearly enough Iron (1)

3 marks

No marks for just number comparisons.

- 2 (a) (ii)  
 RE Ahmed not having enough Vit B1: (carbohydrate) respiration/metabolism/energy release affected (1) restricts/affects enzyme activities (1) 2 marks
- Re: Not enough Vit C: affects growth/maintenance of gums/ligaments/ blood vessels/bones/teeth max 2  
 healing slowed AW (1) immune system less effective (1) max 2 2 marks  
 iron not absorbed effectively (1)
- Re: enough Iron: normal production of red blood cells (1) haemoglobin (1) myoglobin (in muscle) (1) oxygen transport (1) energy release (1) max 2 2 marks
- 2 (b) (i)  
 Vitamin B1 – wheat germ/bran/wholegrain cereals/kidney/nuts/eggs max 1 1 mark
- 2 (b) (ii)  
 Vitamin C – citrus fruits/tomatoes/leafy green vegetables e.g. cabbage/potatoes/ green peppers/blackcurrants/broccoli/strawberries/Brussels sprouts max 1 1 mark
- 2 (b) (iii)  
 Iron – liver/kidney/plain chocolate/egg yolk max 1 1 mark
- 2 (c)  
 Need water for digestion (1) chemical reactions (1) lubricant/fluid for joints (1) body temperature regulation (1) Allow avoiding dehydration/body about 70% water (1) max 3 3 marks
- Total 15 marks
- 3 (a)  
 Any 2 of Antioxidant (1) – preventing food/fat going rancid AW/preventing destruction of Vitamin A/Vitamin C/preventing food browning (1)
- Emulsifiers (1) – preventing water/fat separation/act as stabilizer (1)
- Stabilizers (1) – maintain emulsions/prevent separation of components (1)
- Flavour enhancers (1) – to improve taste of the food (1)
- Sweeteners (1) – improve taste (1)
- Colours (1) – to make food more appealing AW (1)
- Texture enhancers (1) – improve consistency/feel/sensation/appeal (1)
- Bleaching agents (1) – to make food more appealing/remove unwanted colour (1)
- max 2                      linked                      max 2
- Must “reword” from additive e.g. not flavour enhancers enhance flavour! 4 marks

- 3 (b) (i)  
 Any 2 of nuts, shellfish, fruits, food additives, wheat, fish, eggs, strawberries  
 Allow seafood (1) max 2 2 marks
- 3 (b) (ii)  
 Ref to: milk/lactose intolerance (1) gluten/wheat reaction (coeliac disease) (1) 2 marks
- 3 (c) (i)  
 Ref to: more active the person the more energy needed AW (1) increased  
 metabolism (muscle) respiration (1) need more carbohydrate intake /  
 more fat (1) max 3 3 marks
- 3 (c) (ii)  
 Ref to: increase food intake AW (1) provide energy (1) for growth (of baby) (1)  
 protein/amino acids (1) produce milk (1) more iron (1) more vitamin B9/folic acid (1) more  
 calcium (1) max 4 4 marks  
 If just list of “more” components without reasons max 3

Total 15 marks

- 4 (a) (i)  
 Ref to: reducing/eliminating risk of cross contamination (1) transferring  
 microbes AW (1) from raw (1) to cooked meat (1) max 2 2 marks
- 4 (a) (ii)  
 Ref to: ensuring microbes AW in food (1) are destroyed/killed (1)  
 unable to multiply/increase in numbers (1) max 2 2 marks
- 4 (a) (ii)  
 Ref to: removing microbes AW (1) reducing contamination risk (1)  
 reducing food debris/source for microbes (1) max 2 2 marks
- 4 (b) (i)  
 Ref to: (across 3 years)  
 Area 1 cases rise (1) then fall (1)  
 Area 2 cases high/highest number 2003 (1)  
 (big) fall 2004/05 (1) steady 2004/05 (1)  
 Area 3 numbers rising across three years (1)  
  
 In 2003: Area 2 much more than Area 1/3 or/and 3 together (1) Area 1 least cases (1)  
 In 2004: Area 1/3 rise but Area 2 falls (1)  
 Reported cases ‘gap’ much less (1)  
 Area 1 last cases/area 2 most (1)  
 In 2005: Area 1 cases fall (1) Allow max 1 “most” 1 “least” answer

