



**General Certificate of Education**

**Health and Social Care**

*8621/8623/8626/8627/8629*

**HC05 Nutrition and Dietetics**

**Post-Standardisation**

**Mark Scheme**

*2010 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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**GCE Health and Social Care HC05 January 2010 Mark Scheme**

**1**

- ai) Ref to Zac's growth being affected (1) tissue repair impaired AW(1) cells – tissues not maintained AW (1) hormone production affected (1) antibody production/immune system reduced (1) enzyme production affected (1) Max 4      4 marks
- aii) Ref to Zac may gain weight AW(1) allow ref to possibly developing **type 2** diabetes (1) fat build up (1) increased risk of dental caries AW (1) Max 3      3 marks
- bi) Any one of: meat or named example/milk/eggs/cheese/fish or named example/nuts/legumes/seeds/soya beans/pulses/tofu 1 mark
- bii) Any one of: honey/jam/chocolate/cakes/biscuits/named fruit – grapes – apricots 1 mark
- c) Any 2 of Nitrogen/Sulphur/Phosphorus 2 marks
- d) Ref to: idea not appropriate/best one AW (1) since additional fruit may increase sugar content further (1) unlikely to increase protein content (1) unless if nuts eaten then may benefit from added protein(1) allow may add useful vitamins/named example – Vit C may add useful minerals/named example – phosphorus (1) may be encouraged to “snack” on fresh fruit rather than sugary foods(1) Allow fibre added (1) For max marks must include positive and negative points Max 4      4 marks
- Total 15 marks

**2**

- ai) Farah's Vitamin A content adequate AW/**very slight** excess/not excess (1)
- Vitamin B2 content insufficient AW (1)
- Vitamin K content adequate AW/**very slight** deficiency/not deficiency (1)
- Iron content insufficient (1) 4 marks
- aii) Ref to Vitamin A – good night vision/bones/teeth/cell structure (1)
- Vitamin B2 – problems with (cellular) energy release respiration/enzyme activities in cells/carbohydrate AW metabolism AW (1)
- Vitamin K – blood clots normally/in reasonable time (1)
- Iron – risk of anaemic/red blood cell production reduced/ low haemoglobin/oxygen transport affected/cellular respiration problems resulting (1) 4 marks

b) Ref to: eating liver/milk/eggs/whole grains/cheese/green leafy vegetables/fish (1) to raise Vitamin B2 levels (1) 2 marks

Ref to: eating liver/kidney/plain chocolate/lean red meat/meat extract/fortified cereals/oily fish/meat products/green leafy veg (1) to raise Iron levels (1) 2 marks

c) Ref to Farah needing cholesterol for her body cells (1) hormone production (1) bile salt formation (1) transport of fats in her bloodstream (1) allow to protect against arterial disease (unless specified as LDL which is incorrect) (1) Max 3 3 marks

Total 15 marks

**3**

|    |                      |  |         |
|----|----------------------|--|---------|
| a) | <u>Food additive</u> | <u>Reason for use</u> (must be different for each) |         |
|    | Preservative (1)     | extend shelf life (1)                              |         |
|    | Emulsifier (1)       | prevent water/fat separation (1)                   |         |
|    | Food colour (1)      | improve appearance (1)                             |         |
|    | Flavour enhancer (1) | improve taste/appeal (1)                           |         |
|    | Bleaching agent (1)  | remove unwanted colour AW (1)                      |         |
|    | Stabiliser (1)       | prevent separation water/fat (1)                   |         |
|    | Texture enhancer (1) | preserve consistency e.g. jams (1)                 |         |
|    | Sweeteners (1)       | to improve taste (1)                               |         |
|    | Nutrients (1)        | to increase food value (1)                         |         |
|    |                      | Max 3 + 3  | 6 marks |

- b) Ref to: adequate amounts of nutrients/not excess or deficiencies/variety of foods/nutritional values/suitability of foods/palatability/costs/ease of preparation/age of person/level of physical activity/state of health/gender/pregnancy/cultural beliefs/lifestyle choices/allergies/intolerances

**Mark ranges**

0 marks

No response worthy of credit

1-3 marks

Answers generally vague or repetitive cover 1 or 3 points generally without reasoning. Little if any structure and containing errors in spelling, punctuation and grammar. For 3 marks must include at least 2 points with some attempt to reason/justify them.

3-6 marks

Answers cover 4-6 points including some reasoning of relevance. Generally responses are organised but lack precision. There may be errors in spelling, punctuation and grammar. For 6 marks must include at least 5 points with reasoned justification.

7-9 marks

Answers well structured covering 7 or more points, all reasoned and justified. Spelling, punctuation and grammar will be good throughout. For 9 marks must cover some indication of variation within areas given e.g. similar age and activity yet may have different needs due to genetically determined metabolism differences.

Max 9 marks

Total 15 marks

4

a) Ref to: Salmonella fairly constant/slight increase 2006 – 2007 (1) Salmonella most cases both years/either year (1) Clostridium significant rise 2006-2007 (1) Staphylococcus very few cases 2006 and/or 2007 (1) Staphylococcus no significant change 2006-07 (1) Bacillus least/very few cases 2006 and/or 2007 (1) Bacillus no significant change 2006-07 (1) Overall more cases 2007 c.f. 2006 (1) mostly caused by Clostridium (1)  
Allow most/least and more less comparisons to max 3 plus 3 others

Max 6

6 marks

b) Any three of: some foods containing certain bacteria/Salmonella/Clostridium eaten more than others containing Staphylococcus/Bacillus (1)

Some bacteria more easily destroyed by cooking/processing e.g.  
Staphylococcus/Bacillus (1) more foods contain Salmonella/Clostridium c.f.  
Staphylococcus/Bacillus (1)

People more resistant/less resistant to different bacteria – may not show symptoms – be reported while more obviously infected – are reported (1)

Suggests poorer practices relating to Salmonella/Clostridium food sources/type of outbreak (1)

Max 3

3 marks

c) Ref to the immune system (1) not developed fully in the young (1) degenerating in the elderly AW (1)

3 marks

d) Ref to microbes AW (1) unable to reproduce/breed/grow (1) due to low temperature (1)  
Not killed  
marks

3

Total 15 marks

Paper Total 60 marks