



ASSESSMENT and  
QUALIFICATIONS  
ALLIANCE

# General Certificate of Education

## Health and Social Care 8621/8623/8626/8629

*HC05 Nutrition and Dietetics*

# Mark Scheme

*2006 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.

It must be stressed that a mark scheme is a working document, in many cases further developed and expanded on the basis of candidates' reactions to a particular paper. Assumptions about future mark schemes on the basis of one year's document should be avoided; whilst the guiding principles of assessment remain constant, details will change, depending on the content of a particular examination paper.

## Nutrition and Dietetics

HC05

### Question 1

- (a) Likely effects are – weight gain (1) causing obesity (1) tooth decay (1) from acid formation/bacterial plaque (1) heart disease (1) from saturated fats deposits (1) diabetes risk (1) ref insulin less effect (1), max 6  
(6 marks)
- (b) Any 3 of:  
for growth/repair/maintenance of body/for hormones to control body activities/ for antibodies to protect against disease, max 3  
(3 marks)
- (c) Ref to aid digestion *AW* (1) essential for chemical reactions (1) for joint/cell lubrication (1) body regulation (1)  
(4 marks)
- (d) Proteins contain nitrogen (1) carbon (1) hydrogen (1) oxygen (1) may contain sulphur (1) may contain phosphorus (1) amino acids (1), max 2  
(2 marks)

**Total 15 marks**

### Question 2

- (a) (i) Preservative – inactive/destroy microbes/ inhibit enzymes *AW* (1)/ maintain product quality/freshness  
  
Antioxidant – prevent fat rancidity/prevent Vit A/C being destroyed/stop browning (1)/ product quality/freshness  
  
Emulsifier – prevent water/fat separation (1)/aid processing/preparation (1)  
max 3  
(3 marks)
- (ii) Any one of bleaching agents/colouring/flavour enhancer/vitamins/stabalisers (1)  
(1 mark)
- (b) (i) Ref to: enough Vit C (1) not enough Vit B1 (1) not enough Iron (1)  
Allow numerical comparisons  
(3 marks)
- (ii) (Enough Vit C) maintains/helps growth bones/teeth/gums/ligaments  
blood vessels – max 3 egs./helps immune system operate (1) helps wounds to heal (1) Allow helps iron absorption in small intestine (1)  
overall max 4 marks  
  
(Not enough Vit B1) may harm enzyme activities (1) affect involved with carbohydrate respiration (1) affect energy release (1)  
  
(Not enough Iron) ref to Anaemia (1) lacking haemoglobin (in red blood cells) (1) affects oxygen transfer (1) pale/weak/tired/lack energy (1)  
(8 marks)

**Total 15 marks**

**Question 3**

- (a) Any 2 of Age (1) – relating to growth (1) requiring more nutrients or examples (1) more energy as get bigger as grow older *AW* (1)

max 2 marks for effects

Level of physical activity (1) – more active increase nutrient input (1) for energy (1) allow specific examples – more carbohydrate (1) for cellular respiration (1)

max 2 marks for effects

Pregnancy (1) – increase nutrients (1) for baby growth (1) – allow examples – more protein (1) supply foetus with amino acids (1)

max 2 marks for effects

State of health (1) - if ill – needs proteins (1) for antibodies (1) need carbohydrates/fats (1) energy supply (1)

max 2 marks for effects

Must link factor and explanations, 1 for factor, 2 for explanation

(6 marks)

- (b) (i) Vegan diet – not eating animal based food (1) allow egs. of meat/cheese (1) must obtain balance of all nutrients from plant material only (1) essential amino acids (1)

(3 marks)

- (ii) Jewish beliefs – ref to Kosher foods (1) allow eg. of beef, lamb, fish (1) ‘trefah’ foods not eaten (1) allow eg. of pork, shellfish (1) milk may not be eaten after meat for 3/6 hours (1) poultry/meat slaughtered according to ritual (1)

max 3 marks

(3 marks)

- (iii) Coeliac disease – causes gluten intolerance (1) a protein (1) from cereals (1) prevents some nutrient absorption in intestine (1) examples vitamin/mineral deficiencies affecting balance of diet (1)

max 3

(3 marks)

**Total 15 marks**

**Question 4**

- (a) Ref to similar numbers poor hygiene/not cooking thoroughly (1)  
Similar numbers cross contamination/storage of food at too warm a temperature (1)  
Poor hygiene/not cooking thoroughly approx 3x more common/than other  
two/viceversa (1) **Main** causes poor hygiene/not cooking thoroughly or vice versa (1)

(4 marks)

- (b) Ref to microbes (1) removed/not allowed to build up in numbers (1) not transferring from skin to food (1).

(3 marks)

- (c) Any 2 of: elderly/pregnant woman/those recovering from illness

max 2 marks

(2 marks)

(d) (i) Idea that food ‘degenerates’ (1) microbes *AW* may breed (1) cause food poisoning (1)  
(3 marks)

(ii) Ash/cigarette ends may contaminate food (1) encourages coughing (1) spreads microbes *AW* (1)  
fingers touch lips when smoking contaminate food (1)  
(3 marks)

**Total 15 marks**

**Paper Total 60 marks**