



ASSESSMENT and  
QUALIFICATIONS  
ALLIANCE

# General Certificate of Education

Health and Social Care 8621/8623/8626/8629

*HC05 Nutrition and Dietetics*

## Mark Scheme

*2006 examination - June 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) (i) Low NSP (insoluble) – causes digestive problems (1) faeces lack bulk (1)  
constipation (1) (soluble) blood cholesterol not lowered (1)  
overeating (1) bowel cancer (1) diverticulitis (1) max 3 (3 marks)
- (ii) High Saturated Fats – higher risk of obesity (1) heart disease (1) through  
increased blood cholesterol (1) /low density lipoproteins/ LDL (1) max 3  
atherosclerosis ideas (1) plaque in arteries (1) Not saturated fat in arteries (3 marks)
- (b) Saturated fat – contains carbon (1) hydrogen (1) relatively little oxygen (1)  
as glycerol (1) and combination of fatty acids (1) carbon atoms ‘saturated’  
with hydrogen atoms/cannot accept any more (1) double bonds (1) Allow converse max 5 (5 marks)
- (c) Raise NSP – by eating more fruit/examples (1) vegetables/examples (1) max 2  
multi/wholegrains/bran/brown rice - pasta  
Lower saturated fat – eating less meat/example (1) dairy produce/example (1)  
replace saturated fat foods with unsaturated/poly/mons foods (1) allow  
examples (1)  
Ref grill or fry or similar (1) max 4 (4 marks)

### Question 2

- (a) (i) Ref to slightly more protein/enough (1) slightly more/enough Vit B2(1) lacking Vit A/not  
enough/about half (1) not enough/lacking/about half Phosphorus (1) (4 marks)
- (ii) Enough proteins – Zac able to grow (1) repair (1) maintain body tissues AW (1)  
produces sufficient energy (1) Allow protein usage in cells (1) makes enzymes (1) hormones (1)  
all constituent – cytoplasm/protoplasm  
antibodies – immune system functions (1)  
Not enough Vit A – Zac may suffer poor night vision (1) weaker bone/teeth  
formation (1)  
Enough B2 – Zac has normal energy metabolism/Energy release/ATP/respiration (1) growth (1)  
healthy skin (1) helps absorb other B vitamins (1)  
Not enough Phosphorus – Zac may have bone problems (links to Calcium) (1)  
acid – alkaline balance in body upset (1) affect energy production/lack energy/ATP (1)  
overall max 9 marks

- (b) Level of physical activity (1) gender (1) example state of health (1) weight/body size (1) max 2  
(2 marks)

### Question 3

- (a) Foods causing allergies: wheat (1) fish (1) shellfish (1) eggs (1) fruits (1) max 2  
soya (1) milk products (1)  
Effects – lip swelling (1) mouth tingling (1) vomiting (1) asthma AW (1) hives/  
rash (1) itching (1) (2 marks)
- (b) (i) Hinduism – ref to vegetarianism (not vegan) encouraged/beef – pork not eaten/ref to Rajasic (1)  
(meat, pickles, spices) (1) Sattvic (1) (fruit, veg, nuts) (1) Tamasic (1) (left overs/contaminated)  
foods (1) fasting (1) max 2 (2 marks)
- (ii) Muslim – ref to Halal (lawful) (1), Haram (unlawful foods) (1) no pork/pork products (1)  
fish/poultry/goat/sheep (1) cattle if Islamic slaughtered (1) animal cheese (1). Natural  
deaths of animals not Halal (1). Lawful foods – milk/honey/fish (1)  
fasting (1) alcohol forbidden (1) max 2 (2 marks)
- (c) Diabetics need to limit carbohydrate (1) especially sugar intake (1) by avoiding  
sugar/rich foods/eating low sugar alternatives (1) any example/chocolate (1)  
must monitor food intake AW (1) not overeat (1) regular eating/similar  
amounts AW/ eat complex carbohydrates (1) Not balanced diet (4 marks)
- (d) Any 3 of: life style choices – or eg – vegetarian/vegan choice (1) suitability/  
palatability of foods to the individual (1) costs (1) ease of preparation (1)  
age (1) level of physical activity/occupation (1) gender (1) pregnancy (1)  
max 3 (3 marks)

### Question 4

- (a) (i) Microbes AW (1) unable to reproduce (quickly) (1) limits microbe numbers (1)  
chance of illness/infection reduced (1) (3 marks)
- (ii) Food will cook at correct temperature/including middle (1) microbes AW killed/  
destroyed (1) reduced illness/infection risk (1) (3 marks)
- (iii) Raw food contains microbes AW (1) no cross-contamination (1) transfer to  
cooked food/from raw food (1) infection/illness risk (1) (3 marks)
- (b) Ref to Campylobacter cases decreasing (1) over 3 years/2001-3 (1)  
Salmonella cases decrease 2001-2 (1) plateau/very small increase 2003 (1)  
E coli many fewer cases/least common (1) similar number/little fall/rise (1)  
Campylobacter most common cause of food poisoning (all three years) (1)  
similar points Salmonella/next most common AW (1) Overall cases decreasing over 3 years (1)  
due mainly to decrease in Campylobacter (1)  
Allow: food hygiene standards AW improving (1) people/public more aware (1) max 6 (6 marks)

**Paper Total 60 marks**