



General Certificate of Education

Health and Social Care

8621/8623

HC05

Mark Scheme

2009 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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- 1ai) High carbohydrate intake for Alison is likely to cause:- weight gain AW (1)
fat build up (1) possible diabetes (Type 2) not Type 1 (1) increased risk of
hypertension AW (1) increased risk of heart disease/heart attack/heart
problem (1) increase risk of tooth decay (1) max 3 3 marks
- a ii) Low NSP for Alison is likely to cause:- bowel problems/constipation AW (1)
diverticular disease (1) increased risk of bowel cancer (1) rise in blood
cholesterol/low density lipoproteins/LDL (1) as bile salts reabsorbed (1) risk of
atherosclerosis AW (1) further overeating (as not feeling full) (1) max 3 3 marks
- b) Allow any two named vegetables/pulses/wholegrain cereals, bread, rice/bran/named fruits max 2
2 marks
- c) Ref to NSP containing: Carbon (1) Oxygen (1) Hydrogen (1) if COH
allow 1 mark but (C6 H10 O5) allow 2 marks
accept made up of glucose AW molecules 1 mark 3 marks
- di) Any 2 of: fat/protein. Allow saturated fats and unsaturated fats or
mono-unsaturated and polyunsaturated max 2 2 marks
- ii) Fats – energy supply/insulation to prevent heat loss/protection/source of
Vitamins A/D – fat soluble vitamins (1)
Protein – growth/repair/maintenance body cells and tissues/hormones/
antibodies (1) max 2 2 marks
- 2ai) Re Ramon's Vit A intake: slightly less AW than DRV(enough/sufficient) 1 mark
NOT not enough/5µ less
Vit C intake: not enough AW/allow % - fraction approximations e.g. 1 mark
60% DRV (1)
Calcium intake: not enough AW/allow % - fraction approximations e.g. 1 mark
7/10 ths DRV (1)
Zinc intake: enough AW/slightly more than DRV (1) NOT more/1mg over 1 mark
- a ii) Ref to Ramon re. Vit A – good night vision/bones/teeth/cell structure 1 mark
Vit C – problems with ligaments/bones/teeth/gums/blood vessels/immune
system/healing 1 mark
Calcium – weakening of bones AW/teeth/problems muscle/nerve function
1 mark
Zinc – helps growth/wound healing/protein manufacture/immune system
allow repro organ development 1 mark
- b) Ref to Ramon: eating more citrus fruits or example/tomatoes/green leafy
vegetables/potatoes/green peppers (1) to increase Vit C content (1)
eating more dairy products/eggs/fish-bones/green leafy vegetables (1)
to increase Calcium content (1) 4 marks
- c) Any 2 of: Age/level of physical activity AW/state of health AW/size 2 marks
- d) Any 1 of: as an aid to digestion/needed for chemical reactions/lubricant for
joints and cells/regulation of body temperature/body mainly water AW – needs hydration AW
1 mark
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- 3a) 1. Ref to vegans: will not eat animal foods AW (1) either slaughtered/
product (1) ref components from vegetable sources or examples (1) 2 marks
2. Ref to Muslims: can eat meat prepared by Halal methods (1) not
allowed Haram foods (1) not allowed alcohol (1) not allowed blood
and its by-products (1) not allowed pork (1) allow consequence made (1) max 3 3 marks
3. Ref to lactose intolerance: inability to digest AW lactose (1)/lack
lactase cannot break down milk sugar (1) so avoid milk and milk
products (1) 3 marks
- bi) Phytochemicals are: non nutrient AW chemicals (1) in plants (1) giving colour/
flavour/smell/texture (1) 3 marks
- ii) Any 2 of: help protect against cancer/diabetes/cardiovascular disease AW/
hypertension 2 marks
- c) Any pair of the following:
Antioxidants (1) – preventing/slowing down fat rancidity/destruction Vits A
and C/ preventing food browning (1)
Emulsifiers (1) – preventing water/fat separation (1)
Colours (1) – improve food appeal (1)
Bleaching agents (1) – improve food appeal (1)
Stabilisers (1) prevent separation of components (1)
Preservative (1) lasts longer (1)
Texture enhancer (1) impaired palatability (1) max 2 marks
- 4ai) Any of: Campylobacter infections most common AW (1)
Listeria infections least common AW (1)
E.Coli and Salmonella similar numbers of infections (1)
Allow any numerical comparison e.g. Campylobacter infections approx.
5x more common than Salmonella infections and non-numerical comparisons
Relatively much more change/incidence of eating undercooked beef and
contracting E.Coli than eating raw vegetables and contracting Listeria.
Campylobacter more common in poultry/poultry products than Salmonella (1)
max 4 4 marks
- ii) More cases of Campylobacter than Listeria (or vice versa) because: lot of
poultry eaten c.f. raw vegetables (1) may cause more severe symptoms –
therefore cases reported of Listeria cases may be mild – not noticed/reported (1)
Campylobacter commonly found in poultry or Listeria rarely present in raw
vegetables (1) relatively easy to undercook poultry – easy to wash raw veg (1)
max 2 2 marks
- b) 1. Ref to: microbes AW (1) on skin surface AW (1) unable to transfer to foods (1)
allow idea of throw away when used (avoid microbial transfer) (1) allow
gloves 'clean' sterile before use (1) max 3
3 marks
2. Ref to: microbes AW (1) unable/slow to reproduce AW (1) due to low
temperature (1) NOT kills microbes 3 marks
3. Ref to: keeps bin secure AW(1) stop vermin/ vermin not
attracted (1) microbial spread prevented (1) 3 marks
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	AO1	AO2	AO3	AO4
1ai		3		
aii		3		
b		2		
c	3			
di		2		
dii				2
2ai			4	
aii			4	
b	2	2		
c	2			
d				1
3a1	2			
2	3			
3	3			
bi	3			
bii	2			
c	1			1
4ai			2	2
aii			2	
b1		1		2
2		1		2
3		1		2
TOTAL	21	15	12	12
%	35	25	20	20

Paper Total: 60

%: 100