



**General Certificate of Education (A-level) Applied  
January 2011**

**Health and Social Care**

**HC05**

**(Specification  
8621/8623/8626/8627/8629)**

**Unit 5: Nutrition and Dietetics**

**Final**

***Mark Scheme***

---

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 events which all examiners participate in and is the scheme which was used by them in this examination. The standardisation process 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 standardisation each examiner analyses a number of candidates' scripts: alternative answers not already covered by the mark scheme are discussed and legislated for. If, after the standardisation process, examiners encounter unusual answers which have not been raised 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.

Further copies of this Mark Scheme are available from: [aqa.org.uk](http://aqa.org.uk)

Copyright © 2010 AQA and its licensors. All rights reserved.

**Copyright**

AQA retains the copyright on all its publications. However, registered centres for AQA are permitted to copy material from this booklet for their own internal use, with the following important exception: AQA cannot give permission to centres to photocopy any material that is acknowledged to a third party even for internal use within the centre.

Set and published by the Assessment and Qualifications Alliance.

**Question 1**

Question	Part	Sub Part	Marking Guidance	Mark	Comments
1	01		Carbohydrate/Starch (1) Fat (1)	2	
1	02		Ref to either Carbohydrate - Starch or Fat providing Gina with energy/constituent of Gina's cells (1) Fat providing Gina with insulation/protective layers (1)	2	Allow fat is an energy store AW (1) if fats/carbohydrates give energy – 1 mark only
1	03		Ref to Gina's diet being unbalanced AW (1) high energy intake (1) causing weight gain/obesity (1) (high fat intake) increasing risk of heart disease AW (1) max 3	3	
1	04		<p>Likely points will include : ref to fish providing added protein to Gina's diet / which, depending on protein level already in her diet / will help Gina's growth / maintenance/repair of her cells/tissues / produce antibodies/maintain – improve immunity/ help produce Gina's hormones/enzymes / but will also add oils / increasing fat levels with associated problems / amount of oil/fat ingested depends on how fish prepared/cooked – allow e.g. if fried in batter greatly increased/steamed much less / fish also will provide Gina with calcium for Gina's bones-teeth / also may over eat / does not help with the eating of large portions of chips</p> <p>Mark Ranges</p> <p>0 marks No response worthy of credit</p> <p>1-3 marks Probably only 1-3 points made, not reasoned or detailed. Answers vague and superficial. There will be errors in spelling, punctuation and grammar.</p> <p>4-6 marks Likely to make 3 or more points with some reasoning of how the effect(s) are caused. Answers are organised but lack precision. There may be errors in spelling, punctuation and grammar.</p> <p>7-8 marks Answers likely to cover at least five points, all reasoned logically showing understanding. Answers are well</p>	8	Allow benefits of fish oils e.g. preventing heart disease

			structured with good spelling, punctuation and grammar throughout.		
--	--	--	--	--	--

**Question 2**

Question	Part	Sub Part	Marking Guidance	Mark	Comments
2	05		Ref to Ralph's low intake of Vitamin B1 affecting his carbohydrate respiration (1) due to inhibiting enzyme action (1) reduced energy – tiredness (1) may impair nervous system functioning AW (1) Ref to Ralph's low intake of Phosphorous causing weakened bone/teeth (1) as phosphates/combined with calcium part of structure (1) may cause muscle weakness (1) may compound energy effects of vitamin B1 (1) as also involved in respiration reactions (1) Allow references to beriberi (Vit B1) (1) osteomalacia (phosphorus) (1) Max 3 marks Vitamin B1 and 3 for Phosphorus	6	Must identify which of Vit B1/phosphorus is responsible for effects
2	06		Ref to Ralph needing NSP to aid bowel movements/adds bulk to faeces AW/aids digestion (1) by absorbing water in intestines (1) make Ralph feel full (1) avoiding over eating (1) helps even out rate of carbohydrate absorption (1) (soluble forms) lower blood cholesterol (1) less risk of heart problems (1) max 4	4	Lowers risk of constipation/diverticulitis/bowel cancer (1)
2	07		State of health/level of physical activity AW	1	
2	08		State of health – if ill – may need increased dietary intake AW (1) e.g. iron intake for anaemia/energy increase for cancer sufferers (1) if immobile/obese need reduced dietary intake (1) of energy rich foods/carbohydrates – fats (1) if diabetic reduced carbohydrate intake (1) low level physical activity – less food needed AW (1) less carbohydrate – fat (1) to avoid weight gain (1)	2	Allow vice versa for higher activity level
2	09		Vitamin B1 – kidney/liver/peas/beans/cereals/whole grain foods/pork	1	
2	10		Phosphorus –		

			milk/meat/fish/cereals/eggs/peas/beans/apples/broccoli		
--	--	--	--	--	--

**Question 3**

Question	Part	Sub Part	Marking Guidance	Mark	Comments
3	11		Ref to gluten intolerant individuals need to avoid wheat/rye foods (1) as they suffer from Coeliac disease (1) cannot digest the protein gluten (1) and would vomit/have diarrhoea/small intestine damage if eaten (1) causes an inability to absorb vitamins/minerals (1) need to eat gluten free bread/pasta (1) max 3	3	
3	12		Ref to Hindus not allowed to eat beef/pork (1) tend to be vegetarians (1) may fast on special occasions (1) allow will need to increase protein food sources (re Vitamin B12) (1) max 3	3	
3	13		Phytochemicals are <b>non-nutrient</b> chemicals (1) in plant material (1) giving <b>plants</b> colour/flavour/smell/texture (1)	3	Not an additive
3	14		Ref to phytochemicals increasing protection against disease/cancer/diabetes/cardiovascular disease/hypertension AW max 2	2	
3	15		Antioxidants act as preservatives AW (1) preventing reaction of foods with oxygen/oxidation (1) reduce the rate of vitamin breakdown (1) reduces risk of rancidity (1) max 2	2	
3	16		Food colouring replaces colours lost during cooking preparation of food (1) improves appeal of the food AW (1)	2	

**Question 4**

Question	Part	Sub Part	Marking Guidance	Mark	Comments
4	17		<p>Likely points relating to differences in the data will include – More cases reported in Town A overall maybe due to poorer hygiene/knowledge of risks or vice versa Town B. – possibly different types of food poisoning in the towns AW cases may be unreported if symptoms mild (therefore seems less in Town B) or vice versa Town A – more cases in 0-11/65+ c.f. 12 – 64 due to less effective immune systems of the young/elderly – more cases in Town A may be due to the cause e.g. more commonly eaten food/problem with a larger scale food supplies or similar – Town B may have smaller population or vice versa. Likely points relating to similarities in the data will include – ‘Pattern’ AW of reported cases similar in both town i.e. more 0-11 and 65+ cases c.f. 12-64 due to relative effectiveness of immune systems. 12-64 least cases both towns as adults’ immune systems strong. Allow able to maintain good hygiene standards. Over 65+ most cases both towns – may be due to degenerating immune systems. Allow possible reduced hygiene standards with age. Allow- unreported cases may alter the data significantly.</p> <p><b>Band 1</b> – 0 marks – no work worthy of credit</p> <p><b>Band 2</b> – 1-3 marks – Answers likely to cover one or two points but are vague and repetitive, lacking in reasoning and/coherence. There will be errors in spelling, punctuation and grammar.</p> <p><b>Band 3</b> – 4-6 marks – Answers likely to cover three or four points, mainly coherently with some reasoning. Answers are organised but lack precision. There may be errors in spelling, punctuation and grammar.</p> <p><b>Band 4</b> – 7-9 marks – Answers likely to cover at least five points, coherently with sound reasoning throughout. Answers are well structured with good spelling, punctuation and grammar.</p>	9	

4	18		Ref to smoking: cause coughing (1) touch lips when smoking (1) so bacteria AW transferred to food (1)	3	Ignore ash
4	19		Ref to dish clothes when used become wet (1) often warm (1) ideal for bacterial AW breeding (1) transfer to plates/cutlery (1) bacteria AW destroyed by decontamination (1) Max 3	3	