



## **General Certificate of Secondary Education**

# **Home Economics: Food and Nutrition 3562**

**Higher Tier**

## **Mark Scheme**

*2007 examination - June series*

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## Higher Tier

### Question 1

- (a) Growth  
Repair  
Energy  
Maintain health  
Function normally  
Warmth  
Protection of organs  
**Any 3 valid points** **3 marks**
- (b) (i) 2755 kcal  
2110 kcal **2 marks**
- (ii) Men generally have a larger body size / therefore have a higher metabolic rate  
**1 mark**
- (iii) Older people generally less active / children more active / energy needed for growth in children but older people have stopped growing  
**1 mark**
- (c) Proteins  
Carbohydrates  
Fats  
**3 marks**
- (d) Excess energy is stored as body fat  
We put on weight/become overweight, obese **2 marks**
- (e) (i) A diet containing all the nutrients **in the correct amount** for individual needs  
**1 mark**
- (ii) When the amount of energy taken in as food is the same as the amount of energy expended by the body  
Right amount of energy for our body needs **1 mark**
- (iii) The amount of energy required to keep the body alive when it is warm and at rest.  
Energy used to keep heart, lungs, digestive system etc moving. **1 mark**
- Total 15 marks**

### Question 2

- (a) Steady decrease in consumption of potatoes  
Less green vegetables except for 2000  
Processed vegetables up in 1985 but decreases since then  
More fresh fruit – steady increase  
More processed fruit – steady increase  
Much more fruit juices – big increase **6 marks**

(b)

<b>Food</b>	<b>Main nutrient</b>	<b>Benefits to health</b>
Oranges	Vitamin C (38mg)	Anti-oxidant – prevents free radical damage Makes connective tissue. Heals wounds Prevents infection/ increases immunity Absorption of iron
Low fat yoghurt	Calcium (150mg) Protein (3.8g)	Bone health. Growth/repair/maintenance
Olive oil	Total fat (99.9g) Mono-unsaturated fats (73.4 %)	Lowers harmful LDL cholesterol Protects heart
Chickpeas	LBV protein (8.4g) NSP/fibre (5.1g) Carbohydrate/starch (18.2g)	Growth/repair/maintenance Prevents constipation Energy
Oats	Carbohydrate/starch NSP/fibre	Long lasting energy Prevents constipation Reduces blood cholesterol level Reduces risk of CHD
Spinach	Iron (1.6mg) Calcium (160mg) Vitamin C (8mg)	Haemoglobin/red blood cells/healthy blood Bone health See above

(c) **Look for at least one correct response in each box**

<b>Fruit</b>	<b>Advantages</b>	<b>Disadvantages</b>
Fresh	Refreshing Tasty Nutritious Cheap when in season Lots of varieties Provides vitamins A C E	May be expensive out of season Short life Preparation may be needed Waste May be loss of vitamins if not eaten quickly Have to buy frequently
Frozen	Easy to store Will keep for a long time	Limited choice Loss of vitamins/flavour

	No preparation No waste Cheap Full of vitamins Can eat out of season	on prolonged storage Loss of texture Needs to be defrosted
Canned	Keeps well/long shelf life Easy to store Handy standby Cheap	Processing may affect colour Texture may be different Vitamin loss May be canned in sugar syrup
Dried	Easy to store Useful for baking Can be eaten as a snack Nutritious High in fibre	Vitamin loss Higher sugar content Texture is different Taste is different

8 marks

(d) **Credit one advantage and one disadvantage for each form of fruit**

Water soluble vitamins (Vitamins C and B) will be lost  
Leaching of vitamins  
Structural changes e.g. celery curls, radish roses etc

2 marks

**Total 22 marks****Question 3**

## (a) Menu 1

Lower in fat – some in cheese  
Sugar – no added sugar. Intrinsic in fruit  
NSP/Fibre – fruits, jacket potatoes  
Salt some in cheese pizza  
5 a day / vitamins and minerals in salad and fruit  
more starchy foods/slow releasing energy

1 mark

**Criteria bands**

**1-3 Simple response. Answer mentions dietary guidelines but does not link them to foods**

**4-6 More detailed response. Guidelines linked to the foods in the menu.**

6 marks

- (b) Because school populations are multi-cultural and meals should be available for all ethnic groups.  
Because we live in a multicultural society  
Encourages young people to try a variety of foods. Some ethnic groups have dietary restrictions.  
Religious reasons

1 mark



(f) Vitamin D

**1 mark**  
**Total 16 marks****Question 5**

(a)

Type of cereal	Product
Oats	Muesli, porridge, flapjack etc.
Wheat	Flour, bread, Weetabix, semolina, pasta, bulgar wheat etc.
Rye	Rye bread, crisp breads
Rice	Basmati Rice, rice pudding, rice flour, rice krispies, rice cakes etc

**Accept one example for each cereal****4 marks**

(b) Wholemeal flour contains the whole of the wheat grain/white flour is more processed  
 Wholemeal flour contains the bran  
 More fibre in wholemeal  
 100% extraction rate  
 Bran layer removed from white flour  
 70% extraction for white flour  
 White flour is fortified  
**Any 3 relevant points** **3 marks**

(c) In order to make flour mixtures rise  
 To give baked goods a light, pleasant texture **2 marks**

(d) Baking powder **1 mark**

(e) Sieving flour  
 Rubbing in  
 Creaming  
 Whisking  
 Rolling and folding **3 marks**  
**Any 3 suitable responses**

(f) Formed from the protein in flour when it is mixed with water. Elastic substance in flour which stretches allowing bread to rise. A substance in flour which some people are allergic to.  
**Credit any suitable response from above** **2 marks**

(g) (i) plain flour

(ii) SR flour

(iii) **Strong** plain flour or strong wholemeal flour

**1 mark per correct answer**

**3 marks**

- (h) Thickens 1  
Softens 1  
As temperature increases (1)  
Starch grains swell/absorb liquid 1  
Starch cells burst 1  
Gelatinisation 2  
**Simple answer 1-2 marks only**

**6 marks**  
**Total 24 marks**

### Question 6

- (a) **Microwave oven:**  
Food cooks quickly, saves on washing up as dishes can be used to cook in and serve, saves fuel

**Food processor:**  
Saves time in many ways – chopping, pureeing, blending, rubbing in, chopping etc

**Blender/liquidiser/smoothie maker**  
Useful for soups and purees. Can be used for baby foods.

**Bread maker:**  
Saves time and work in making bread and other mixtures. Can be set on delay to get hot bread in the morning.

**Hand mixer:**  
Useful for creaming cakes, whisking etc.

**Steamer:**  
Saves fuel. More than one item can be cooked at the same time therefore saving on washing etc. variety of uses from vegetable to fish or puddings.

**Kettle:**  
Saves electricity/gas when boiling water

**Toaster:**  
Quicker than a grill  
Saves washing grill pan  
Also accept: deep fat fryer/frying pan  
Contact grill with suitable uses

#### **Criteria for award of marks**

- 0-3** Answer muddled and only a superficial knowledge of different types of labour saving equipment. Little more than a list of equipment. No reasons for the suggestions made. Basic communication skills.



**4-6** Fairly well organised answer. A reasonable understanding of the range of labour saving equipment available with some reasons for their selection. Satisfactory communication skills.

**7-9** Well organised answer. Good references made to a range of equipment with some justification on their selection. Good communication skills. **9 marks**

(b) Larder Refrigerator / fridge freezer

Size and capacity

Energy rating

Manufacturers name

Adjustable door rack

Storage arrangements inside refrigerator

Space available inside the kitchen

Star rating for frozen food compartment

Additional features e.g. automatic defrosting, digital temperature control

Split shelves

Bottle grip in door

Ice maker

Drinks dispenser

Amount of money available

**Any 3 suitable answers to be discussed**

**6 marks**

(c) Temperature should be between 1° and 5°C (must state temperature)

Don't overload with food

Don't open the door more than necessary, let's warm air in

Store raw foods below cooked foods

Keep food covered

Defrost regular/clean regularly

Don't put hot food into refrigerator

Do not keep food past its sell by date

**Any 4 suitable answers**

**4 marks**

**Total 19 marks**

### Question 7

- (a) Wide range of foods available by both shopping methods.  
 Both methods generally cheaper than local shops but there will be an additional charge for delivery on internet bill  
 Usually good quality and fresh  
 Self service in shop and on internet website you select but someone else actually does the shopping and may put in alternatives if goods not available  
 You can choose own sell by dates if shopping yourself.  
 Standards of hygiene good in both methods. Foods kept in refrigerated vans for home delivery.  
 Multi buy/special offers available in both methods however there may be additional bargains in store if goods are being reduced.  
 Have to have transport if shopping in supermarket whereas shopping in comfort of your own home on internet.  
 Saves travelling/fuel when shopping on internet but will be delivery charge.  
 No heavy carrying, goods delivered to your door when internet shopping.  
 Less tempting to impulse buy so could save money on internet but may also miss bargains.

No advice available on Internet

Criteria for award of mark

- 0-3 Answers muddled. List of advantages and disadvantages only with no comparisons made between the different methods. Only a basic understanding shown. Poor communication.
- 4-6 A range of points compared and contrasted between the shopping methods. Fair communication skills. Quite a well organised answer  
If candidates give a list without discussion, maximum 5 marks
- 7-9 Good discussion to compare and contrast the 2 shopping methods. A good range of points made. Well organised. Good communication skills.

A well discussed answer relating to only one shopping method, maximum 5 marks.

**9 marks**

**Total 9 marks**

### Question 8

(a) **Pregnancy**

Essential fatty acids – brain growth and cell division

Vitamin D – prevents low birth weight/oily fish, margarine

Folate – prevents spina bifida/green vegetables/breakfast cereals/bread 200 - 300ug

Calcium – skeleton growth of foetus/dairy foods etc/Daily supplement 0.4mg

Iron – baby's store of iron and to prevent anaemia in mother/red meat not liver

NSP/Fibre – to prevent constipation/wholemeal products

Higher energy needs (250kcal)

Vitamin C – iron absorption/citrus fruits etc

Additional protein/meat, fish, cheese, eggs, milk etc

May credit foods to avoid if relevant

**Babies (aged 0-9 months)**

Infant's diet consists solely of milk for first few months.

Breast milk is best as it provides all the nutrients in the correct proportions for infant to grow properly.

Also protects babies from infection and babies less likely to suffer from allergies.

Bottle milk needs to be made up carefully to prevent food poisoning.

Weaning is gradual introduction of solid foods

Do not add salt or sugar to weaned foods

Need a good supply of protein, starch, vitamins and minerals.

Iron important at this stage because supply of iron now used up.

**Elderly**

Their nutritional needs include calcium – to maintain bones / milk, dairy, white bread etc,

Vitamin D – for calcium absorption

Appetites may be small so need nutrient dense foods and high fibre foods. Income may be low and have other difficulties including diabetes, arthritis etc

Fruit and vegetables, milk and dairy, margarine/oily fish

Vitamin C – healing wounds

Iron – red blood cells/orange juice etc

Protein – maintenance/pulses and cereals as cheap forms of protein  
NSP/High Fibre foods  
Fat – insulation  
Less energy

**Criteria for award of marks**

- 0-5 Answer shows only a superficial knowledge of the nutritional needs at different stages of the life cycle and how these needs can be met. Little mention of nutrients by name. No links made between nutritional needs and the types of food to be eaten. Much repetition. Basic communication skills and poor spelling.
- 6-10 Answer shows a general understanding of the nutritional needs at different stages in the life cycle. Some links made between nutritional needs and foods to eat. A range of nutrients mentioned. Satisfactory communication skills and spelling. May concentrate on 2 of the 3 stages.
- 11-15 A clear understanding is shown of how nutritional needs differ as we go through life. Candidate is able to show how nutritional needs can be met at various stages in the life cycle. Good range of nutrients mentioned accurately. Satisfactory communication skills and most words spelt correctly.

**Total 15 marks**  
**Paper Total 136 marks**