

General Certificate of Secondary Education

Home Economics: Food and Nutrition

3562/H

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.

Higher Tier 3562/H

Question 1

- (a) Avoid sweet and sugary foods
Avoid fizzy drinks (acid)
Avoid sweet drinks (sugar)
Avoid sweet foods between meals
Importance of fluoride (toothpaste, water)
Use plaque disclosing tablets
Brush teeth regularly
Regular dental checkups
Eat all sweets in one go/less acid attack

Accept any 3 relevant answers (3 marks)

- (b) When food is eaten a white sticky substance called plaque builds up on the surface of the tooth(1)
When sugar (1) is eaten it is absorbed into the plaque, broken down by the micro organisms and turned into acid (1)
The acid attacks the enamel (1)
Enamel dissolves leaving weak spots (1) which get larger and deeper until a cavity is formed (1)
Rots the teeth (1)

OWTTE Max 4 (4 marks)

- (c) Not part of the cell structure of plants
Includes refined sugars, extracted sugars in honey and fruit juice, added sugars

Simple answer 1 mark. Well explained response 2 marks (2 marks)

- (d) Do not add sugar to weaning foods
Do not introduced sweetened fruit juices/squashes too young
Encourage children to drink water between meals
Do not give sweetened dummies
Check label on jars of babies food

Any 2 (2 marks)

- (e) Milk
Cheese
Bread
Bones of canned fish
Hard water
Green vegetables
Yogurt

Any 3 (3 marks)

- (f) Vitamin D (1 mark)

Total 15 marks

Question 2

- (a) Mouth/tongue/teeth
Stomach
Small Intestine/Ileum
Large Intestine/Colon

(4 marks)

- (b) Teeth – tear, rip and grind food into pieces small enough to swallow
Tongue – pushes food around the mouth and down the throat
Salivary glands – produce saliva to moisten food and make it easier to swallow

OWTTE. Simple response 3 marks

Detailed response 6 marks

(6 marks)

- (c) Speed up chemical reactions/biological catalyst/catalyst
Breaks down large molecules of food into smaller ones so they can be absorbed

(2 marks)

- (d)

Nutrient	Enzyme	Simpler Substance
Protein	Pepsin/Trypsin/Protease	Amino Acids/Peptides
Fats	Lipase	Fatty Acids and glycerol
Carbohydrate	Amylase	Glucose

Accept maltose/galactose

1 mark for each enzyme, 1 mark for simpler substance. Need to give both fatty acids and glycerol for mark. Max 6

(6 marks)

Total 18 marks

Question 3

- (a) Hygienic storage and packaging
To protect it from damage during storage and transport/easier to transport
To give information to customers
To attract customers
For customers convenience
Prevents tampering
Can be used during reheating
To reduce waste (by protecting from damage e.g. eggs in cartons)
To increase life of foods by canning MAP etc/keep them fresh
Some foods have to be sold in prescribed amounts/particular sizes e.g. butter

Any 4

(4 marks)

- (b) Tamper proof seals (jam jars)
Ring pull cans (canned foods)
Easy pour spouts (cartons of fruit juice/milk)
MAP (modified atmosphere packaging (ready meals)
Vacuum packaging (bacon etc)
Microwaveable packaging

Resealable packets
Packaged to eat on the go

Any 3 (3 marks)

(c) (i) Material can be recycled (1 mark)

- (ii) Glass
Cans/tins/aluminium/steel
Paper
Cardboard
Plastics
Not polythene/polystyrene

Any 4 (4 marks)

(d) Trade Descriptions Act protects against:
- misleading claims/descriptions/honestly described
- false claims/descriptions (2 marks)

Total 14 marks

Question 4

- (a) (i) Microwaveable label
Power output/rating in watts
Heating category – how efficiently the oven will heat a small amount of food
ABCDE
A needs the longest heating time E the shortest

Any 3 relevant points (3 marks)

- (ii) To inform consumers how to cook foods properly
To prevent food poisoning
To make sure people with different ovens get the same results when they cook food

Any 2 suitable responses (2 marks)

- (b) To destroy bacteria/safe to eat
Short term preservation
To destroy natural toxins (e.g. in kidney beans)
To make food easier to digest
To make food easier to eat
To make food more appetizing and attractive
To enhance the flavour of food
To give variety
To reduce bulk
To provide hot food
To create new products from a mixture of ingredients

Any 4 (4 marks)

(c) (i) Roasting – adds fat/calories. Baking lower in fat, more fibre if skins left on. (2 marks)

(ii) Steaming – less loss of water soluble vitamins, e.g. B and C
Need to name at least one vitamin for 2 marks (2 marks)

(d) Dextrinisation 1
Browns 1

Max 2 marks (2 marks)

(e) Size in relation to kitchen space
Family size
Choice of fuel – gas, electric, combination, solid fuel etc
Running costs
Cost to buy
Cost to run
Installation
Safety labels
Appearance – colour, style etc
Reliability
Guarantee
Split level
Double oven
Ceramic hobs
Economy features
Self clean/easy to clean
Manufacturers name/well known/reliable/reputable manufacturer
Not energy efficiency labels

Criteria bands

1-3 Simple understanding of points to consider when choosing a cooker. No discussion of the points raised. No discussion of the points raised. Poor expression. Little use of correct terminology.

4-6 A general range of points given with some explanation of the points raised. Some use of correct terminology.

7-9 A good range of points to look for when choosing a cooker with good explanations. A clear understanding was shown with regard to points to look for when choosing a cooker. Good use of appropriate terminology.

Max 9 marks (9 marks)

Total 24 marks

Question 5

Constipation	Increase liquid Increase fibre Wholemeal/bread Wholemeal cereals Fruits esp. skins of apples etc Vegetables, especially leafy, pulses seeds
Anaemia	Increase vitamin C Eat more iron rich foods Eat more red meat Offal Green vegetables Pulses Plain chocolate
High blood pressure	Lower salt intake Lo salt alternatives Cut down on salty foods Credit suitable food suggestions

Max 3 per condition. Max 9

(9 marks)

Total 9 marks

Question 6

- (a) Use lean/back bacon – less saturated fat/use less bacon
Use less oil – less fat/low fat spread
Remove/cut down butter – less saturated fat/total fat
Add more vegetable – more fibre/eat 5 a day
Change white rice to brown rice – more fibre
Reduce soy sauce – high salt content
Reduce eggs – high cholesterol

1 mark per suggestion, 1 mark per reason. Max 8 marks

(8 marks)

- (b) You know what has been added
The recipe can be adapted to make it healthier
No MSG/salt
Less risk of food poisoning
You know whether it has been reheated
Do not accept references to cost

Any 3

(3 marks)

- (c) Gelatinisation (1)
Starch grains absorb the water (1)
Rice grains absorb the water (1)
Grains increase in size (1) /swollen
Changes occur as temperature increases
Cell walls soften

Starch escapes (1)

- Max 5** (5 marks)
- (d) Useful source of energy/calories
 Slow releasing energy
 Low in fat
 Small amount of calcium
 B vitamins/thiamine
 Cheap
 Filling/add bulk to meals
 Bland therefore many uses
 Sweet or savoury dishes/versatile
 Good for gluten free diets
 Quick to cook
 No preparation
 Varieties – Basmati, pudding, wild, long grain
- Light to carry – depends on size of package
 Keeps well

Anticipate answers linked to nutrition, variety of uses, etc.

Any 6 (6 marks)

Total 22 marks

Question 7

- (a) To add variety to the diet/make foods available out of season
 To make use of food when it is cheap and plentiful
 To preserve foods in ways to make new products out of the food e.g. jam
 To make foods last longer/extend shelf life (3 marks)
- (b) Fruit:
 Suitable methods to discuss:
- Reduction of temperature e.g. Freezing. Micro organisms less active in cold conditions become dormant growth and multiplication cease. Quick freezing to ensure small ice crystals and less damage to structure of fruits. Fruits at home at -24°C and stored at -18°C. Little loss of vitamin C and B1 losses if foods are blanched. Good colour retention. Not suitable for bananas or melons.
 - Jams. Boiling fruit with a sugar solution until it forms a gel which sets on cooling. Sugar added as a preservative – 60% finished jam therefore jams has a high sugar content. Only fruits with high pectin content make good jam.
 - Jellies
 - Heating e.g. Bottling – similar to canning
 - Heating e.g. Canning – a form of heat sterilization to destroy microbes and enzymes and then sealed to prevent contamination during storage. Loss of heat sensitive vitamins. May have sugar added in the form of syrup. Loss of NSP in peaches, poor colour/texture in strawberries.
 - Removal of air e.g. Drying increases concentration of sugars. Evaporation of water used to be done by lying in sun now by hot air bed. Heat sensitive vitamins are lost and may be further affected during reconstitution and cooking.

- Addition of a chemical preservative e.g. jams/jellies to inhibit the action of enzymes. Microbial cells are surrounded with concentrated solution which draws water out of cells by osmosis. High concentrations of salt, acid (not for fruit) and sugar.
- Irradiation. Radiation passes through food and kills harmful micro-organisms, Low dose irradiation used to delay ripening on bananas etc and longer storage on strawberries.

Criteria bands

0-3 Answers may be muddled and information superficial. A limited number of points will have been made and candidates will only have a basic understanding of the effects of preservation on fruit. Answers may concentrate mainly on one method of preservation. Little or no use of appropriate terminology and only basic communication skills.

4-6 Answers will be fairly well organised and clearly presented. A good range of points will be given which will show a good understanding of the effects of a variety of preservation methods on fruits. There will be some use of relevant and appropriate terminology and satisfactory communication skills.

7-9 Answers will be well organised and clearly presented. A good range of points referring to most methods of preservation of fruit. There will be good use of terminology and good communication skills. Reference will have to be made to at least four types of preservation.

(9 marks)

Total 12 marks

Question 8

Examples of answers to reward

Lifestyle

Increasingly people live alone/elderly/meals for one

Grazing

There are more working women

Less time for food preparation

More demand for convenience/quick cook foods

Microwaveable meals

One stop shopping

Financial factors – two incomes therefore more money to spend on food/eating out/takeaways etc.

Prepared to pay extra for convenience e.g. ready prepared/salads

Families don't eat together/eat in front of TV

Linked to jobs

Multi-cultural

More variety of foods

Ethnic foods/shops

Restaurants

Festivals

Traditions

Dietary restrictions e.g. fasting, food combinations, and foods they cannot eat

Income

Eating out
Ready meals
Fruit and vegetables
Value lines
Type of supermarket used
Luxury foods
Organic foods
Meat, fish consumption

Availability

Seasonal foods
Imported foods
More variety
Processed foods
Types of shops available locally/mobile shops
Rural area - pick your own
 - farmers market
Organic foods

Technology

Cheaper versions of basic foods – margarine
Low fat spreads
Cholesterol lowering spreads
Probiotic drinks etc.
Novel foods – Quorn
Quick to prepare foods – cook chill meals/one pot meals/steam cuisine etc.
Kitchen equipment
Improved packaging to enable us to eat away from home.

Advertising

15% all advertising is on food/big business
Children’s TV/high sugar and fat foods
Take away foods
Sporting heroes promoting unhealthy foods – crisps etc.
Doctors/experts promoting a healthy image

Criteria bands

1-5 Answers muddled and information superficial. No real understanding shown of the range of factors affecting food choice. Answers may concentrate on only one factor. Little or no use of appropriate terminology. Basic communication. Poor spelling and use of grammar.

6-10 A limited number of points will have been made. Candidates may concentrate on only 1 or 2 types of factors influencing food choice. Some use of specialist terms. Candidates spell, punctuate and use the rules of grammar with sufficient accuracy.

11-15 Fairly well organised answer dealing with at least three types of factors affecting food choice. A good range of points will have been included. Candidates spell, punctuate and use the rules of grammar with reasonable accuracy. They use a good range of specialist terminology.

16-20 Answers will be well organised and clearly presented. A good range of points referring to most of the types of factors affecting food choice. References will have been made to at least 4 of

the categories. Candidates spell, punctuate and use the rules of grammar well. They use a good range of specialist terms.

(20 marks)

Total 20 marks

Paper total 134 marks