



EXAMINATIONS COUNCIL OF ESWATINI
Eswatini General Certificate of Secondary Education

FOOD AND NUTRITION

6905/01

Paper 1

October/November 2020

Confidential

MARK SCHEME

{6905/01}

MARKS: 100

1. (a) Definition of terms

(i) Malnutrition

Incorrect or unbalanced intake of nutrients / wrong feeding / when the body receives wrong amount of nutrients. [1]

(ii) Metabolism

-Complex collection of chemical reactions within the body. [1]

(b) (i) Plant- avocado pear, pear, nuts, soya, olives, seeds,e.g. sunflower. (Any one) [1]

Animal-fish-liver oils, oily fish, egg yolk, meat, meat products, e.g. Lard, milk and milk products, e.g. cheese. . (Any one) [1]

(ii) Visible fats - is easy to detect in food such as fat on meat, butter, lard, cooking fat, etc. (Any well explained point with an example) [1]

Invisible fats - is a inconspicuous part of food and is difficult to detect e.g. lean meat (fat with muscles), egg yolk, oily fish, nuts, prepared foods, e.g. cakes, pastries, fried foods, milk, crum, etc. (Any well explained point with an example) [1]

(c) Effects of moist heat on proteins:

Chemical structure denatured (changed) - permanent alteration- protein coagulate- becomes less soluble- if overheated, become less digestible.

(Any three)

[3]

(d) Enzyme conditions to work on:

- specific nutrient or food to act on
- correct temperature
- correct pH

[3]

(e) Two food groups in the food pyramid to be used in small quantities

(i) Fats and sugary foods - cause heart disorders/cause obesity/dental caries.

(ii) Bread, other cereals - excess is stored as fat in the body causing obesity/ cause constipation/ diverticular disease/cancer of the colon

(Any two well explained points)

[4]

2. (a) (i) Sources of riboflavin (Vitamin B₂)

- whole grain cereals – liver – kidney – meat – milk - eggs - green vegetables
 - yeast- cheese - oily fish, fish roe
- (Any two)**

[2]

(ii) Functions of riboflavin (vitamin B2)

- Essential for growth
 - Release of energy from food
 - Normal structure of mucus membrane
- (Any two)**

[2]

(b) Symptoms of pellagra

- dementia – loss of memory, confusion and depression
 - diarrhoea – abdominal discomfort, loss of appetite
 - dermatitis – especially on the skin that is exposed to the sun
- (Any two)**

[2]

(c) Osteoporosis process

- calcium starts to be lost/not replaced-loss of bone mass
- bones become weak, brittle and break easily

[4]

3. (a) (i) Common function of sodium chloride

- To maintain correct concentration of body fluids

[1]

(ii) Two groups of people who require an increased amount of sodium chloride and potassium in the diet.

- workers in heavy industry / manual workers
- those who live in a hot climate
- people doing sports

[2]

(b) Dietary guidelines with reasons for a healthy lifestyle.

- Eat less sugar - causes obesity, dental problems
- Eat less fat - cholesterol, concentrated source of energy, causes obesity
- Eat more fibre - satiety value, encourage peristalsis
- Eat more fruits and vegetables – these are high sources of fibre
- Drink less alcohol – has lot of energy/carbohydrates
- Eat less salt-causes high blood pressure, heart diseases
- Eat a variety of foods-to obtain a variety of nutrients
- Eat in moderation- too many calories would increase body weight

(Any three)

[6]

4. Absorption of fats

glycerol and fatty acids - absorbed into lacteal - recombine to form fats – mix with lymphatic fluid – pass round the body in lymphatic system to be transported to the blood stream [5]

[Total Marks: 40]

Section B

Answer **two** questions in this section.

5. (a) (i) Two types of cheese

- Hard cheese
- Soft cheese
- Processed cheese
- Cream cheese
- Cottage
- Soft
- Blue veined

(Any two)

[2]

(ii) Effect of heat on cheese

- Hard cheeses are heated
- Fat melts
- Protein (caseinogen) coagulates
- Overheating causes protein to toughen and become stringy
- Reduces digestibility / less digestable
- Eventually burns

(Any five)

[5]

(b) Importance of milk in the diet of a pregnant woman

HBV proteins - for growth of foetus and repair of tissues for the mother

Calcium and phosphorus - to form strong bones of foetus and maintain bones of mother

Vitamin A - for growth of foetus

Vitamin D – assist in the absorption of calcium and phosphorus

[6]

(c) Heat treatment of milk

(i) Sterilisation - Milk is heated in bottles up to 113^0C for 15 -40 minutes-left to cool naturally. [2]

(ii) Homogenisation - Milk is first pasteurised then forced through a mesh -to break fat globules-cooled and bottled. [2]

(d) Three advantages of a food processor.

- saves time as is much faster than table and hand mixer
 - carry out specialized functions / can do a variety of functions
 - saves labour / energy
 - produce better result than could be achieved by hand. **(Any three)**

[Total Marks: 20]

6. (a) (i) Definition of batter

- a mixture of flour (usually plain), liquid (milk, water or stock) and egg [1]

(ii) Types of batters

- coating batter
 - pouring batter
 - fritter batter

(iii) Reasons for using sauces

- enhance flavour
 - to provide contrasting colour / improve appearance
 - to provide contrasting flavour
 - to provide contrasting texture
 - bind ingredients
 - add colour
 - add nutritive value
 - reduce richness of some foods
 - add interest and variety to a meal

(iv) Ways to flavour a sauce

- add cheese- cheese sauce
 - add chopped parsley - parsley sauce
 - season with nutmeg and black pepper
 - chopped onion
 - celery

(Any two) [2]

(b) Justification of ingredients

(i) Strong plain flour – has lot of gluten-necessary to make the dough more elastic to allow for many rollings and development of layers / flakes [1]

(ii) Lemon juice – develop elasticity, counteract richness / flakiness [1]

(c) Rules for rolling pastry

- Use as little flour as possible for rolling out, not to alter the proportion of fat to flour.
- Never stretch pastry during rolling - it will shrink during cooking
- Do not turn pastry over- it will be hard
- Roll lightly in a forward direction- to maintain even pressure
- Avoid re-rolling it will be hard
- Raise rolling pin before the edge of the pastry is reached - to avoid knife edges (Any two)

[4]

(d) Storage of cleaning agents in a home

- Use and store out of reach of children-they might drink them
- do not put into empty soft drink bottles - they may be drunk by mistake.
- never mix lavatory powder cleaners with bleach -this causes dangerous reactions.
- wear rubber gloves when using caustic solution -to prevent burns on skin
- Store chemicals in a cool, dry cupboard – to avoid explosions / loss of strength
- Use a well ventilated place, some agents may produce harmful gases

(Any three well explained)

[6]

[Total Marks: 20]**7 (a) Choosing green leafy vegetables**

- firm - crisp - good green colour - not wilted - no bruises - not eaten by insects and pests

(Any three)

[3]

(b) Conservative method of cooking vegetables

Vegetables, except leafy types can be sautéed in fat - placed in a covered casserole / saucepan with a little liquid in the oven - and cooked until tender / for a short time - The juices can be used for gravy. - This conserves most of the flavour, colour and shape of vegetables. Alternatively, cook vegetables - in a microwave oven - in a minimum water - to conserve nutrients.

[6]

(c) Importance of food labelling when preparing meals

- gives instructions on cooking methods/times- for good results
 - lists the weight/quantity- to know how many people the food will serve
 - list ingredients or nutrients-makes it easy to balance meals
 - people on special diet - can easily avoid ingredients or nutrients not suitable
 - give daily recommended allowances
- (Any two) [2]

(d) Reasons for choosing a vegetarian diet

- Religious belief
 - Objection to the slaughter of animals
 - Dislike of animal flesh
 - Dietary reasons
 - Health reasons
 - Love of nature
 - Economical reasons
- (Any three) [3]

(e) Problems with a vegan diet

- diet too bulky-cook to reduce bulk
- lack of vitamin D-stay in sunlight or eat food fortified with vitamin D
- lack of essential AA -provide TVP and complimentary protein
- lack of variety and flavour / monotonous-use spices and herbs
- lack of iron-provide green vegetables and iron tablets
- lack of fat soluble Vit A and D- provide green vegetables
- Lack of calcium- provide pulses, nuts, cereals
- Lack of vitamin B12- take as a supplement

(Any three well explained) [6]

[Total Marks: 20]

SECTION C

8. (a) Points to consider when planning meals for a family

- Meals must be balanced – to provide all nutrients needed by the body
- Time of the year / season - get food cheap and at its best
- Cooking time available- to serve meals on time
- Climate - to serve hot food on cold days
- Equipment available - some dishes need special equipment
- Vary cooking methods, colour, flavour and texture - adds interest
- Skills of cook - to prepare food skilfully
- Likes and dislikes - for food acceptance
- Special requirements of individuals - they differ, depended on age, health, sex and occupation
- Occasion - determines type of food suitable
- Money available - determines type of food to be bought (affordability)
- Shopping facilities / to plan foods that are locally available
- Number of people to be served - to avoid waste

Reasons for cooking food

- To make it safe to eat by destroying bacteria
- To make it more attractive by developing colour
- To make it more palatable by developing flavour
- To tenderise food so that it is easier to eat
- To make it more digestible by cooking starch
- To preserve by destroying micro-organisms and denaturing enzymes
- To add variety in the diet by combining flavours
- To provide hot food on cold weather to regulate body temperature
- To reduce bulk so that more can be eaten.

Band	Descriptors	Past Mark	Total
High	<p>Candidate is able to:</p> <ul style="list-style-type: none"> - explain most of the points to consider when planning meals - explain most of the points on reasons for cooking food - explain reasons for each point showing a clear understanding of the points - give information that is precise and related to planning meals - Have more understanding of the topic on meal planning 	14 – 20	20
Middle	<p>Candidates may:</p> <ul style="list-style-type: none"> - give some of the points to consider when planning Meals - gives some points on reasons for cooking food - explain some reasons for each point showing understanding of some points - give some information that is precise and related to planning meals - have some understanding of the topic on meal planning 	9 - 13	
Low	<p>Candidates may:</p> <ul style="list-style-type: none"> - give a few points to consider when planning meals - limited points given on reasons for cooking food - explain a few reasons for each point showing a little understanding of the points - have little or no understanding of the topic on meal planning - give little/limited information that is precise and related to planning meals 	0 – 8	

(b) Importance of offal; choice, storage and uses in food preparation.

Definition - includes internal organs of an animal, e.g. liver, kidney, heart, brain, tongue, sweetbreads (pancreas and thymus glands). It also includes tail, feet, ears and head of the animal.

Importance:

High quality protein- repair worn out tissues-replace cell as the body grows and new cells added and enhances recovery from sickness.

Fat-reserve of energy for long term storage and forms an insulating layer around internal organs.

Carbohydrate - Liver may contain a little glycogen

Vitamins - rich source of retinol (Vitamin A) which is stored in the liver, also found in kidney and heart- beneficial for eye health and reducing diseases that cause inflammation.

B vitamins-have a cardio protective effect, i.e. they protect against heart diseases and maintains healthy blood pressure- and reduces high cholesterol e.g. B 12 and Folate,

Also beneficial to the brain to reduce Alzheimer's disease, dementia, depression and anxiety.

Folate-essential for growth and beneficial for fertility and helps to avoid foetal defects in a baby. Also helps during morning sickness phase of pregnancy.

Thiamine - in heart and liver.

Vitamin C - in liver, though not so valuable.

Minerals - Tripe has useful amounts of calcium- for bone formation.

- Iron in liver and some in kidney. Good for pregnant mothers to increase baby's blood supply- for increasing haemoglobin level in the blood- also maintenance and health of the skin.

Choice and points to consider

- Be bought fresh- particularly kidneys, liver and heart
- Be eaten within 24 hours of purchase
- Carefully washed and prepared before eating
- Thorough cooking to prevent food poisoning and to tenderise offal
- Be bought fresh- particularly kidneys, liver and heart
- Tripe is cleaned and boiled for 12 hours
- Tongue is soaked and salted

Storage

- Offal kept in a cold place / refrigerator and used as soon as possible after purchase
- Can be frozen for long term storage
- Use as soon as possible

Uses in Food preparation

- **Liver used as** - Main dish / Pates, casseroles and pastes.
- **Kidney** - Steak and kidney pie, casseroles and breakfast dishes.
- **Heart** - stew or braise with some stuffing
- **Brain** - grilled, fried and braised dishes
- **Sweet breads and tongue** - used in salads and sandwiches after gentle boiling to render tender
- **Tripe** - used for stews
- **Tail** - in soups and stews

Band	Descriptors	Past Mark	Total
High	<p>Candidate is able to:</p> <ul style="list-style-type: none"> - discuss and explain most of the points to the importance, choice, storage and uses of offal in food preparation - explain reasons for each point with a clear understanding - give information that is precise and related to the topic on offal - give several examples to support facts 	14 – 20	20
Middle	<p>Candidates may:</p> <ul style="list-style-type: none"> - discuss some of the points on the importance, choice, storage and uses of offal in food preparation - explain reasons for each point with a limited understanding - give information that lacks some precision on the topic - give some examples to support facts of the topic on the topic 	9 - 13	
Low	<p>Candidates may:</p> <ul style="list-style-type: none"> - give limited points on importance, choice, storage and uses of offal - explain a few points on the topic, showing little understanding of the points - explain a few points on the importance, choice, storage and uses of offal. - have little or no understanding of the topic on offal - give little/limited information that is precise and related to offal 	0 – 8	