



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate 2014

Marking Scheme

Home Economics – Scientific & Social

Higher Level

Note to teachers and students on the use of published marking schemes

Marking schemes published by the State Examinations Commission are not intended to be standalone documents. They are an essential resource for examiners who receive training in the correct interpretation and application of the scheme. This training involves, among other things, marking samples of student work and discussing the marks awarded, so as to clarify the correct application of the scheme. The work of examiners is subsequently monitored by Advising Examiners to ensure consistent and accurate application of the marking scheme. This process is overseen by the Chief Examiner, usually assisted by a Chief Advising Examiner. The Chief Examiner is the final authority regarding whether or not the marking scheme has been correctly applied to any piece of candidate work.

Marking schemes are working documents. While a draft marking scheme is prepared in advance of the examination, the scheme is not finalised until examiners have applied it to candidates' work and the feedback from all examiners has been collated and considered in light of the full range of responses of candidates, the overall level of difficulty of the examination and the need to maintain consistency in standards from year to year. This published document contains the finalised scheme, as it was applied to all candidates' work.

In the case of marking schemes that include model solutions or answers, it should be noted that these are not intended to be exhaustive. Variations and alternatives may also be acceptable. Examiners must consider all answers on their merits, and will have consulted with their Advising Examiners when in doubt.

Future Marking Schemes

Assumptions about future marking schemes on the basis of past schemes should be avoided. While the underlying assessment principles remain the same, the details of the marking of a particular type of question may change in the context of the contribution of that question to the overall examination in a given year. The Chief Examiner in any given year has the responsibility to determine how best to ensure the fair and accurate assessment of candidates' work and to ensure consistency in the standard of the assessment from year to year. Accordingly, aspects of the structure, detail and application of the marking scheme for a particular examination are subject to change from one year to the next without notice.



Coimisiún na Scrúduithe Stáit State Examinations Commission

Leaving Certificate Examination, 2014

HOME ECONOMICS – SCIENTIFIC AND SOCIAL HIGHER LEVEL

Written Examination

280/320 MARKS

Marking Scheme

Instructions to Candidates

- Section A** There are **twelve** questions in this section.
Candidates are required to answer any **ten** questions.
Each question carries **6** marks.
- Section B** There are **five** questions in this section.
Candidates are required to answer **Question 1 and any other two questions.**
Question 1 is worth **80** marks.
Questions 2, 3, 4 and 5 are worth **50** marks each.
- Section C** There are **three** questions in this section.
Candidates are required to answer **one** elective question to include
part (a) and either **part (b) or part (c).**
Electives **1 and 3** are worth **80** marks each. Elective **2** is worth **40** marks.

In developing the marking schemes the following should be noted:

- *In many cases only key phrases are given which contain information and ideas that must appear in the candidate's answer in order to merit the assigned marks*
- *The descriptions, methods and definitions in the scheme are not exhaustive and alternative valid answers are acceptable*
- *The detail required in any answer is determined by the context and the manner in which the question is asked, and by the number of marks assigned to the answer in the examination paper. Requirements and mark allocations may, therefore, vary from year to year.*
- *Words, expressions or phrases must be correctly used in context and not contradicted, and where there is evidence of incorrect use or contradiction, the marks may not be awarded.*

Section A

Answer any **ten** questions from this section.

Each question is worth 6 marks.

Write your answers in the spaces provided.

1. In relation to carbohydrates, explain **each** of the following properties: (6)

Caramelisation

Heat applied to sugar or sugar syrup; sugar melts and caramelises producing a darker caramel colour; a pleasant smell and a slightly bitter after taste; etc.

Crystallisation

This occurs if more sugar is added than can be absorbed by a liquid; crystal particles are formed when the mixture cools; used in the confectionary and sweet industry; can occur in jam making if over 65% of jam is added; etc.

2. Complete the following table in relation to the digestion of lipids. (6)

Digestive Organ	Secretion	Enzyme	Product
Small Intestine	Intestinal juice	lipase	Fatty acids and glycerol

3. Differentiate between the following and give **one** food source of each. (6)

Haem iron

Ferrous iron; soluble; easily absorbed; etc.

Source

Offal; meat; meat products; chicken; etc.

Non-haem iron

Ferric iron; cannot be absorbed by the body; must be changed into ferrous to be absorbed; etc.

Source

Eggs; wholegrain flour; dark green vegetables; fish; etc.

4. What is Basal Metabolic Rate (BMR)? (6)

The minimum amount of energy needed to sustain the body at complete rest; measured when the body is at complete rest, maintain body temperature and keep the internal organs working; etc.

Give **two** factors that determine a person's basal metabolic rate.

- (i) **Body weight;**
- (ii) **Age; gender; activity; pregnancy; hormones; climate; etc.**

5. Name and explain the primary function of **one** national agency involved in the Irish Food Industry. (6)

Name: **Teagasc, BIM, An Bord Bia, FSAI, etc.**

Function

Teagasc – research on agri - food development and production; advice and training on farming issues e.g. Rural Environment Protection Scheme REPS; etc.

BIM – develop Irish marine culture; promote seafood nationally and internationally; promote eating fish; etc.

An Bord Bia - promote Irish food nationally and internationally; support service for small and large Irish food companies re marketing their products; etc.

The Food Safety Authority of Ireland (FSAI) ensure that food produced and sold in Ireland meets high standards; etc.

6. Classify cheese and give **one** example in each class (6)

Classification	Example
Hard	Cheddar, Parmesan, Cheshire, Emmenthal, etc.
Semi hard /semi soft	Stilton, Gouda, Halloumi, Edam, etc.
Soft	Cottage, Brie, Mozzarella, Feta, Camembert, etc.
Processed	Cheese spread, Smoked Cheese, Spreads, etc.
Mould (internal/ external)	Cashel blue, Roquefort, Gorgonzola, etc.

7. Explain the term *functional food*. (6)

Foods that have health benefits over and above their nutritive value; must be made from natural ingredients; when digested it should have a special function; etc.

Outline **two** health benefits of including functional foods in the diet.

- (i) **reduce cholesterol (plant sterols); reduce the risk of CHD;**
- (ii) **improved digestive system (probiotics); reduce cancer; heart disease (omega 3); reduce the risk of neural tube defects (Folic acid); etc.**

8. Complete the table below in relation to the use of micro-organisms in food production. (6)

Micro-organisms	Use
Lactic acid bacteria	cheese, yoghurt
Lactobacillus bulgaricus	yoghurt
Yeast	bread, wine making, beer making

9. What is Pay Related Social Insurance (PRSI)? (6)

A compulsory deduction from income; which goes to the government to provide social welfare; run employment and training schemes; related to pay; employees and employers share the cost; different PRSI classes; etc.

Name **two** PRSI benefits.

- (i) **job seekers benefit, maternity benefit, carers benefit,**
- (ii) **disability benefit; state pensions, optical, dental; etc.**

10. Identify **two** features of current National Housing Policy in Ireland. (6)

Sustainable communities supported by amenities and proper infrastructure; retention of listed buildings; protection of natural environment; provision of social and affordable housing through social housing schemes; promotion of energy efficient homes - insulation grants; BER ratings for houses for sale; solar panel grants; support of home ownership through mortgage interest relief; home modification grant scheme; rent allowance scheme (RAS); registration of rented accommodation PRTB; etc.

11. Name a fire / flame retardant finish used on household furnishings. **(6)**

Proban; Pyrovatex; etc.

Outline **two** effects of this finish.

- (i) **reduces risk of fabric igniting; self extinguishing;**
- (ii) **may cause allergic reaction; may require special care during cleaning; etc.**

12. Explain how consumers / householders can contribute to sustainable waste management. Give **two** points. **(6)**

- (i) **reduce; reuse; recycle;**
- (ii) **compost; buy in bulk; buy recyclable products; buy concentrated detergents; etc.**

Section B

Answer Question 1 and any other two questions from this section.

Question 1 is worth 80 marks. Questions 2, 3, 4 and 5 are worth 50 marks each.

1. Shown below in the table is the cost (€) and percentage (%) of weekly social welfare allowance required to purchase the foods necessary for healthy eating for four households using three different grocery store outlets.

	Multiple supermarket	Low cost shop	Local shop
Household 1 Adult man and woman, boy aged 5 years and boy aged 14 years <i>(Total household requires 8200 calories per day)</i>	€132.40 29%	€114.80 25%	€255.40 56%
Household 2 Adult man and woman without children <i>(Total household requires 4400 calories per day)</i>	€82.20 25%	€65.80 20%	€154.70 47%
Household 3 Woman aged 65+ years <i>(Total household requires 1800 calories per day)</i>	€32.40 14%	€27.00 12%	€54.00 23%
Household 4 Single adult woman with a boy aged 5 years <i>(Total household requires 3400 calories per day)</i>	€54.80 21%	€45.40 17%	€109.00 42%

- (a) Evaluate shopping in the **three** grocery outlets referred to in the chart above. (12)

3 points @ 4 marks each

Points may include some of the following: cost; convenience; time; brand loyalty; customer loyalty i.e. shop local; etc.

multiples were cheaper than local shops but more expensive than low cost – they tend to stock a wide selection of products and different brands at competitive prices; etc.

low cost shop was the least expensive – these shops may not have as many store outlets so cost of travelling to these has to be taken into account, and in some cases tend to be outside towns so not accessible without transport; may not have the range of locally produced food products; etc.

local shop was the most expensive – however for many families (households 3 and 4 in particular) this shop may be the most accessible in terms of access to transport; etc.

- (b) Apart from family size, give **three** reasons for the variation in the percentage of income spent on food each week. (12)

3 reasons @ 4 marks each

Age – young children require a lot of energy; elderly people's energy requirements fall with decreased activity and decreased BMR; etc. *Gender* – in general women have a lower calorie requirement than men; etc. *Activity* – the more physically active the more energy is

required; etc. *Appetite* – males tend to have greater; etc. *Nutritional knowledge* – convenience foods can be expensive; etc. *Cooking skill / time* – ready prepared meals are more expensive than purchasing raw ingredients; etc. *Specialised diets* - coeliac, diabetic, low fat - products tend to be expensive but necessary; etc. *Functional foods* are expensive but regularly purchased by health conscious individuals; etc. *Lunch foods* purchased for school going children; etc.

- (c) Protein rich foods are a significant cost for many families. Recommend a variety of low-cost protein foods **and** state how each can be incorporated into a healthy eating plan. (9)

3 points @ 3 marks each

Good value (economical) cuts of meat for family meals; meat/fish on special offer; pulse vegetables, hummus; myco proteins such as quorn, tofu, TVP; dairy products i.e. milk, cheese, yoghurt; use of eggs; nuts; quinoa, couscous; etc.

Healthy eating plan – use above foods as main meals for family; salads for packed lunches (pulse vegetables, quinoa); meat substitutes or meat extender (tofu, TVP); snacks (cheese); low cost dishes e.g. Spaghetti Bolognese; etc.

- (d) Give a detailed account of protein and refer to:

- classification (simple and conjugated)
- supplementary value / complementary role
- structure (primary, secondary and tertiary).

(24)

3 groups @ 4 marks each

6 points @ 2 marks each

Classification	Group	Sub-group	Examples	Food Source
Simple	Animal	Fibrous	Collagen Elastin myosin	Connective tissue (meat)
		Globular	myoglobin Lactalbumin Ovalbumin	meat Milk eggs
	Plant	Glutelins	Glutelin Oryzenin	Wheat Rice
		Prolamines	Zein Gliadin	Corn/maize wheat
Conjugated	Lipoproteins Phosphoprotein Nucleoproteins chromoproteins		Lecithin Casein Chromosomes chlorophyll	Egg yolk Milk Cell nuclei Green plants

- supplementary value / complementary role

2 points @ 4 marks each

(8)

This is the ability of protein foods to make good the deficiency of another; when foods which are lacking in one or more of the essential amino acids are eaten together, a full complement of essential amino acids can be provided if the deficiency of one amino acid in one food is made up by the other; e.g. beans on toast provides a complete protein, but beans on their own would be deficient; other examples are hummus and pitta, dhal and chapatti, etc.

Bread	Methionine ↑	Lysine ↓
Beans	Methionine ↓	Lysine ↑

- structure (primary, secondary and tertiary)

3 points @ 5 marks each

(15)

Primary Structure

This is the sequence or order of amino acids in the polypeptide chain; amino acids are linked together by peptide links; etc.

Secondary Structure

This is further linking of amino acids in the polypeptide chain to give protein a definite shape which is often in the form of a spiral; etc.

Examples of the links/bonds are:

Disulphide links – when 2 sulphurs join e.g. two cysteine amino acids (cysteine contains an SH group) link together; this can take place on one polypeptide chain or bringing together two polypeptide chains; etc.

Hydrogen bonds – polypeptide chains can be linked by hydrogen bonds when the hydrogen in one chain bonds with the oxygen in another chain e.g. collagen; etc.

Tertiary Structure

This refers to the three dimensional organisation of the polypeptide chain into a compressed unit due to the pattern of folding of the polypeptide chains; the protein chains cross link to form a *fibrous*, straight, coiled or zig- zag in shape or a *globular* structure; etc.

2. 'A thorough understanding of the factors which influence meat eating quality is imperative in order to produce a product consistently in line with consumer expectations'. (Teagasc)

(a) Discuss the nutritional significance of meat in the diet. (20)

5 points @ 4 marks each

Protein – HBV for growth of body cells, manufacture of hormones; myosin, actin and globulin in meat fibres; connective tissue contains collagen and elastin; etc.

Fats – saturated fat for energy; content varies depending on the type, the cut and the method of cooking; pork and lamb higher fat content than chicken breast; etc.

Carbohydrate – none therefore serve with a starchy food; liver may contain glycogen; etc.

Minerals – haem-iron in red meat and offal to prevent anaemia; small amounts of potassium for muscles; zinc for enzyme activity; phosphorous for muscle contraction; sulphur; etc.

Vitamins – source of B group vitamins niacin, thiamine B1, riboflavin B2, pyridoxine B6 all for the release of energy; cobalamin B12; small amounts of vitamins A and D in the liver; etc.

(b) Describe **each** of the following:

- the factors that cause toughness in meat
- **two** methods of tenderising meat. (15)

3 factors @ 3 marks each

Factors - *age of the animal meat from older animals is tougher; etc. activity the more active parts e.g. legs are tougher; etc. treatment before slaughter – rest; etc. correct hanging time; incorrect cooking methods; etc.*

2 methods @ 3 marks each

Methods - *before slaughter - animal should be rested to allow build-up of glycogen; etc. after slaughter –hanging allows time for the glycogen to change to lactic acid and helps to tenderise the meat; etc. mechanical breakdown e.g. beating; mincing; marinating; etc. long slow moist cooking e.g. stews and casseroles; etc. injection of enzymes; etc.*

(c) Set out details of **one** process used to extend the shelf life of meat.

In your answer refer to:

- name of process = *2 marks*
- how the process is carried out to include the underlying principle involved

3 points @ 3 marks each

- the effect of the process on meat. (15)

1 point @ 4 marks

Process – Freezing, Refrigeration.

Freezing: boned, trimmed; blast frozen –30°C; fast frozen; sealed in moisture proof package; liquid no longer available; etc.

Effect: loss of extractives and soluble nutrients in drip; fat can go rancid if stored badly; freezer burn if exposed to air; retains nutrients, colour and texture; slight loss of vitamin B and minerals; etc.

Refrigeration: meat generally covered; cool temperature of fridge 2°to 5°C retards growth of micro-organisms; etc.

Effect: loss of extractives and soluble nutrients in drip; fat can go rancid if stored badly; freezer burn if exposed to air; retains nutrients well; slight loss of vitamin B and minerals; etc.

Underlying principle freezing / refrigeration: reducing temperature – low temperatures 5°C or lower for refrigeration, - 25°C to - 18°C for freezing inhibit enzyme activity and microbial growth; microbes are inactivated; moisture is converted to ice, making it unavailable for microbial growth; fast freezing forms small ice crystals which helps maintain colour, flavour, texture and nutrients; wrapping prevents the re-entry of microbes; etc.

Process - Vacuum Packing / Modified Atmospheric Packaging:

meat boned, wrapped in strong polythene; all air removed; needs refrigeration; has a use by date; etc.

Effect: must be treated as fresh once opened; nutritive value, flavour and texture unaffected; etc.

Underlying principle: remove air – aerobic microbes need air to survive; sealing prevents the re-entry of microbes; gases i.e. carbon dioxide, oxygen and N₂ (inert gas) may be used; etc.

Process – Curing/Salting: cooled to 4°C, injected with brine, soaked in brine for 4 days; hung in cold room 4/5 days; smoked or green; etc.

Effect: little loss of nutritive value; increase in sodium; change in colour and flavour; etc.

Underlying principle: addition of chemicals, the addition of salt dehydrates microbial cells through osmosis and affects enzyme activity; etc.

Process: Canning: food cooked; syrup, brine, sauce added; air removed, cans sealed and sterilised; etc.

Effect: long shelf-life; loss of B vitamins especially thiamine; meat tenderised, cooked, sealed; etc.

Underlying principle: high temperatures are used, 140°C destroy microbes and inactivates enzymes; etc.

Process - Dehydration: packet meals, soup, etc. contain freeze dried meat; meat is prepared and freeze-dried; once rehydrated use quickly; etc.

Effect: loss of Vitamin B; change in texture, meat can become tough; long shelf-life; etc.

Underlying principle: moisture removed – microbes require moisture for metabolism and growth; etc.

3. Outdoor dining is a great way to savour good food, company and the great outdoors.

(a) Outline a HACCP system that should be followed when preparing and barbecuing food. Refer to potential hazards **and** the corresponding control measures that should be implemented.

(24)

6 points @ 4 marks each

(1 reference to preparation, 1 reference to cooking + 4 others)

	Potential Hazards	Control Measures
Preparing	<p>Contamination – bacterial, chemical;</p> <p>Multiplication of bacteria;</p> <p>Cross contamination;</p>	<ul style="list-style-type: none"> • foods within date and with quality assurance marks; • hands washed with antibacterial soap before and after handling food; handle food as little as possible; • colour coded boards to prevent cross contamination; keep all food covered; avoid cross-contamination by ensuring that raw food does not come into contact with cooked food; make sure frozen foods are fully thawed (preferably in the fridge on the bottom shelf); • use separate utensils for handling raw and cooked meat; keep perishable foods like salads, coleslaw and quiche in your fridge until needed; keep raw meat separate from cooked meat and ready-to-eat foods like salads; • maintain the fridge temperature below 5°C, this temperature will delay the growth of micro-organisms; • ensure that containers used for storage are absolutely clean; • Avoid having foods for too long in danger zone 6 - 63°C; etc.
Barbecuing/ Cooking	<p>Multiplication of bacteria;</p> <p>Cross contamination;</p> <p>Survival of bacteria;</p> <p>Food poisoning;</p>	<ul style="list-style-type: none"> • when cooking poultry always ensure that sufficiently high temperatures 72°C or higher are reached to prevent the risk of food poisoning; • make sure food has been cooked thoroughly, this is particularly important when cooking poultry, pork, minced and skewered meats, such as burgers, sausages and kebabs on the barbecue - while the outside may look cooked (and in some cases burnt), the inside can still be raw; make sure to turn food regularly; • when cooked place on a clean plate; for meats that need to be cooked all the way through be sure to cut into the centre of them to check that: steaks or whole meat joints of beef or lamb can be served 'rare' as long as they are cooked on the outside as any harmful bacteria will be on the outside only, and not in the centre; • if using a marinade with your barbeque, make sure any marinade used on raw meat is not then used as a sauce to coat vegetables or cooked meat as it will contain raw meat bacteria; bring marinade to the boil before serving it; • serve cooked food straight after cooking; avoid reheating; if reheating food, make sure it reaches temperatures above 100° C; <i>cooked foods must be held above 63°C; etc.</i>

(b) Assess grilling/barbecuing as a method of cooking.

Refer to:

- cooking/underlying principle
- guidelines to follow in order to ensure palatability of the food
- effect on the nutritive value of the food.

(20)

3 points @ 3 marks each

Cooking / underlying principle - fast method of cooking food by **radiant heat** from an electric element or gas grill / barbecuing, involves cooking food over radiant heat e.g. burning charcoal, heat from the grill seals the surface of the food; food is cooked on a solid plate which in turn cooks the food by conduction; both methods retain nutrients, moisture and flavour; food needs to be turned throughout the process so that it cooks evenly; etc.

3 points @ 3 marks each

Guidelines - pre-heat grill; seal surface of the food with high heat to prevent nutrient and moisture loss; use tongs to turn food; foods should not be thicker than 25mm to ensure the food cooks right through; don't salt food before grilling, it inhibits surface browning; oil grill grid to prevent sticking; food needs to be turned throughout the process so that it cooks evenly; cooking oil brushed on the surface of the food prevents dryness; marinating food in advance will add flavour and retain moisture; accurate timing is important as overcooking can occur easily; etc.

1 point @ 2 marks

Effect - protein denatures which improves the texture; reduces fat content as fats melt; loss of vitamin B and C; maillard reaction browning through heating proteins and carbohydrates; shrinkage due to collagen which is converted into gelatine which results in loss of meat juices and loss of nutrients; etc.

(c) Differentiate between toxic food poisoning **and** infectious food poisoning.

(6)

2 points @ 3 marks each

Toxic food poisoning - ingesting food that is contaminated by a toxin produced by a bacterial cell; some bacteria produce exotoxins as they grow in food both before and after it is eaten; exotoxins are hard to destroy; boiling for 30 mins is required; symptoms develop quickly - often within 2 hours; examples: staphylococcus aureus, clostridium botulinum, clostridium preferingens; etc.

Infectious food poisoning - caused by consumption of food containing large numbers of pathogenic bacteria; these bacteria make endotoxins which are released when they die; endotoxins are easy to destroy; proper cooking and reheating will destroy both toxins and bacteria; if not destroyed symptoms will appear after approx. 12 hours; e.g. salmonella, E coli, campylobacter and listeria cause infectious food poisoning; etc.

4. **Kitchen appliances play a prominent role in enhancing the performance of modern kitchens.**

(a) Discuss the following factors that should be considered when selecting kitchen appliances for a family home:

- sourcing consumer information
- design
- value for money.

(12)

3 points @ 4 marks each (1 reference to each)

Sourcing consumer information – sales people; consumer magazines e.g. Consumer Choice; web sites; advertisements; newspaper and magazine articles; manufacturers leaflets and brochures; TV programmes; word of mouth; etc.

Design – easy to operate; sturdy, durable; colour and shape; safety; ease of cleaning; space available; etc.

Value for money – cost i.e. initial, running and servicing; reliability/brand name; guarantee/ after sales service; etc.

(b) Set out details of a study you have undertaken on microwave ovens.

Refer to **each** of the following:

- construction **and** working principle

(20)

4 points @ 2 marks each

Construction – metal lined enamel steel box; glass door encasing perforated metal sheet; safety lock and safety seal; internal light; turntable; controls; **transformer** increases domestic voltage; **magnetron** changes electrical energy to electromagnetic energy; wave guide guides waves into the cabinet; etc.

3 points @ 4 marks each

Working principle - transformer increases domestic voltage; magnetron changes electrical energy to electromagnetic energy; wave-guide, guides the microwaves into cabinet; microwaves can be reflected, transmitted and absorbed; microwaves penetrate food to a depth of 2-4cm; microwaves cause food **molecules to vibrate** rapidly, which causes friction and produces high heat; heat spreads to the centre of food through conduction; any water in food is driven to the surface and prevents browning of food; etc.

- guidelines for use.

3 points @ 2 marks each

(6)

Guidelines for use - time accurately; cover food to prevent spatters; turn/stir food to cook evenly; pierce skin of sausages, potatoes; arrange food thickest part outwards; use recommended containers only; allow standing time; suitable cooking processes – defrosting; reheating; cooking; melting; heating; etc.

- (c) Explain how the consumer can protect the environment when choosing, using and disposing of electrical appliances.

(12)

3 points @ 4 marks each (1 reference to each)

Choosing – high rating on energy efficient label; choose correct size for needs; etc.

Using – economy / short cycles in washing machine / dishwashers; use full loads; use low temperature washes; standby mode switched off; etc.

Disposing – WEEE directive - retailers of electrical and electronic equipment have obligations in relation to waste from electrical and electronic equipment by providing free in-store take back for customers buying new electrical equipment; bring to waste disposal /recycling centre; care when disposing of old fridges (refrigerant gas); etc.

5. One of the most striking features of the family in Ireland during the last decades of the twentieth century is the rapid rate at which it has changed.

- (a) Outline the historical development of the family in Ireland from the beginning of the twentieth century to the present day.

(16)

4 points @ 4 marks each

Pre-industrialisation (1900-1960) – **extended family most common; large families; agriculture provided most of employment; arranged marriages common; child mortality rates high; segregated gender roles; authoritarian discipline; patriarchal control; religion had a strong influence; rural electrification in 1940's reduced mothers workload; 1940's farming became less labour intensive; 1950's improvement in general standard of living; etc.**

Post-industrialisation (1960- 1990) – **decline in rural extended family, move towards more nuclear families; more mobile; couples married younger; both parents could work outside the home; couples married for love rather than economic reasons; wages increased, better standard of living; children nurtured and educated; 1960's saw introduction of 2nd level education for all; family size decreased; etc.**

The modern family (1990- present day) – **family members abroad to seek work; communication facebook and skype; further reduction in family size; dual-income families increased; more egalitarian type families, greater democracy within families; higher standard of living; increased demand for childcare facilities; role overload; role conflict as parents try to manage elderly parents as well as their own families; change in family structure due to introduction of divorce so more single parent families; blended families; state supports for families; recession –stay at home fathers; both parents unemployed even those highly skilled/qualified; civil partnerships; same gender partners; etc.**

- (b) (i) Give an account of **each** of the following functions of the family:

- economic function
- socialisation function
- educational function

(15)

3 points @ 5 marks each (1 reference to each function)

Economic - in some societies large families work together as an economic unit; in modern society one/both parents may work and children are economically supported; working family members pay taxes and spend money, contributing to the country's economy; etc.

Socialisation - children learn how to behave in an acceptable way through imitation and observation; children need consistent discipline to help them develop a set of values; etc.

Educational - act as the primary educator; to pass on beliefs and customs through informal learning; to provide praise, encouragement and a stimulating environment; to support work of school, helping children to reach their full potential; etc.

- (ii) Explain how state interventions assist the family in carrying out these functions. **(10)**

2 points @ 5 marks each (reference to 2 different state interventions)

State Intervention:

Allowances – e.g. job seekers' allowance, carers' allowance, child benefit, old age pension; state supported services – e.g. medical cards, homes for the elderly, free travel and benefits for the elderly; etc.

Socialisation - pre-schools, primary and secondary schools continue the process of socialisation through the hidden curriculum; if the family fails, the state deals with non-conforming individuals through the judicial system; etc.

Education - early childhood care and education scheme ECCE; formal schooling begins at around five years of age; help for those experiencing learning difficulties, e.g. resource hours, special classes, SNA's; etc.

- (c) Assess the role of grandparents in modern family life.

3 points @ 3 marks each

(9)

Grandparents may provide support for other members of the family through child-minding; grandparents often indirectly teach young people respect and can be a great emotional support for children or grandchildren; provide financial assistance; more relaxed with grandchildren and can be positive role models for their grandchildren; etc.

Section C

Answer one elective question from this section.

Candidates who submitted Textiles, Fashion and Design coursework for examination may attempt only Question 2.

Elective 1 – Home Design and Management (80 marks)

Candidates selecting this elective must answer 1(a) and either 1(b) or 1(c).

1.(a) The design and construction of modern houses is undergoing radical change, with particular emphasis on sustainable energy.

- (i) Identify **three** areas of the house that should be insulated in order to reduce heat loss. Recommend a method of insulation for each area **and** explain the underlying principle of each method. (24)

3 points @ 8 marks each

(Area: 2 marks, Method: 2 marks, Underlying Principle: 4 marks) x 3

Attic/roof: fibre blanket insulation; loose fill insulation; foam insulation; insulate water tank and pipes to prevent freezing; etc.

Wall insulation: cavity walls - air, polystyrene sheets, polystyrene foam; solid walls - blanket insulation (fibreglass or rockwool) inserted into frame on internal wall and covered with plasterboard; insulation sheets attached to walls and covered with plasterboard; etc.

Floor insulation: fill gaps in and around floor boards; fitted carpets with thick underlay; etc.

External insulation: polystyrene with reinforced mesh, acrylic paint finish; etc.

Window/door insulation: well-fitting windows and doors; double/triple glazing; draught proofing; heavy lined curtains; etc.

Hot water cylinder/pipes: permanently insulated cylinder; lagging jacket; split foam sleeves on pipes; etc.

Underlying principle

Some materials have very good insulating properties and therefore prevent heat from escaping; certain materials have no insulation properties, they are good conductors so heat escapes; good insulators/poor conductors (air, polystyrene, fibreglass) are used to prevent/reduce the amount of heat loss; etc.

- (ii) Name **and** set out details of **one** renewable energy source you have studied.

Include reference to:

Name = 2 marks

- source (3 marks)
- advantages/disadvantages (2 points @ 3 marks each)
- sustainability (1 point @ 3 marks)

Due to an inconsistency between the English and Irish versions of the examination paper, non-renewable sources of energy were also accepted.

(14)

Source - Solar power – sun.

Advantages/disadvantages - can supply 50-60% of hot water requirements in the home; reduced heating costs; etc.

Sustainability – could supply a large proportion of the world's energy requirements for an infinite period; etc.

Source - Hydropower – water; tidal power; fast flowing rivers.

Advantages/disadvantages – very viable to operate in Ireland but the initial costs can be very expensive; the technology is not yet available at a price that would make it commercially viable; running costs once the plant is set up are relatively low; etc.

Sustainability – good supply; Ireland surrounded by water; etc.

Source - Wind power – energy captured from the wind.

Advantages/disadvantages – noisy; spoil natural landscape; lots of opposition to it from people living in the locality; expensive to set up; low running costs; etc.

Sustainability – Ireland is ideally located to capitalise on wind energy, winds from Atlantic coast are very strong; etc.

Source - Bio energy – biomass- organic material e.g. leaves, stems, wood, manure, sewage etc; biofuels – solid (wood), liquid (oil).

Advantages/disadvantages – suitable for heating homes and water; liquid bio fuel can be used as a fuel for vehicles; harmful emissions produced, damaging to the environment; etc.

Sustainability – wood is a slow growing form of energy; it needs good planning for utilisation as an energy source; etc.

Source - Geothermal – earth’s crust.

Advantages/disadvantages – cost affective; reliable; water warm when entering the house; expensive to install; etc.

Sustainability – very sustainable; etc

(iii) Write an informative note on the Building Energy Rating (BER) system.

3 points @ 4 marks each

(12)

A Building Energy Rating (BER) is similar to the energy label on appliances, with a scale of triple A to G; A-rated homes are the most energy efficient, while G is the least efficient; since 1st January 2009, a BER certificate is compulsory for all homes being sold or rented; to sell or rent a house it must be assessed by a registered BER assessor in order to get a certificate; the assessor will also advise on how to improve the energy rating; etc.

and

1. (b) From whole house revamps to room makeovers, tired and dated interiors can be transformed at relatively low expense.

(i) Discuss **four** factors that should be considered when planning the interior design of the home.

(16)

4 factors @ 4 marks each

Aesthetics; comfort; ergonomics; cost; environmental awareness; family size and circumstances; etc.

(ii) Name **and** describe **two** different wall finishes suitable for use in a living room. State **two** properties of each finish.

(14)

(Name: 1 mark, Description: 2 marks, Properties: 2 points @ 2 marks each) x 2

Paint

Water-based paint - easy to apply; quick drying; no strong odour; inexpensive; range of colours; durable; easy to clean; etc.

Specialised paint - textured - plastic fibres give textured finish; range of colours; durable; etc.

Wallpaper

General purpose wall paper - design printed onto paper; varies in thickness; good to hide

faults; variety of designs; etc.

Washable wall paper - coated with a plastic layer; withstands condensation; durable and strong; suitable in all rooms; huge variety; camouflages faults; makes rooms cosier; etc.

Embossed Wall paper - design is stamped into paper; can be painted after hanging; etc.

Wood chip - wood is pressed between two layers of paper; gives textured effect; can be painted over; etc.

Others – wood panelling, ceramic tiles, etc.

or

1.(c) Property has always been considered to be a good long-term investment and buying will probably save money in the long run compared to a life time of renting.

(i) Discuss the comparative costs of buying versus renting a house for a family. (15)

3 points @ 5 marks each

Buying - initial costs - deposit - usually 10% of purchase price, in the case of local authority mortgages 5% of purchase price; lending agency fees; an application fee; lenders survey cost; searches; indemnity bond; legal fees - may be a fixed or a percentage of the purchase price in addition to legal searches; land registry fees which are part of the legal process; buyer's survey fee; when purchasing second-hand housing - stamp duty; government taxes payable at different rate depending on the size of the house, the value of the house; etc.

On-going costs of buying - mortgage repayments: a monthly expenditure based on the amount borrowed; mortgage protection/life assurance policy: may be a monthly or once yearly premium; home insurance: for building and contents; property tax; furnishing costs; maintenance/repairs costs; service charges: e.g. refuse collection; water charges; redecorating /repairs; replacing furniture/furnishings; garden maintenance; etc

Renting - initial costs – deposit, usually one month's rent in advance; agency fee - applies if an agency secures the accommodation for renting; although expenses relating to renting appears to be far less than for buying, actual rent is often more expensive than the repayments on a mortgage for the average house; buying a house can be an investment in some areas as property prices increase in value whereas renting does not offer a long-term return; however renting may be a preferred option in areas where house prices have plummeted due to the recession; *On-going costs of renting* - rent; insurance of contents; minor repairs; water and refuse charges; etc.

(ii) Write an informative note on the private rented accommodation sector. (15)
Give **three** points.

3 points @ 5 marks each

Includes houses, apartments and flats; found mainly in urban areas especially larger cities; popular with students, young people starting work, are an option for those who cannot afford to purchase a home; quality of accommodation can vary; affords flexibility for those in temporary employment; allows for movement from different areas; more rent supplement may be provided; landlords are required to be registered with the PRTB; etc.

Elective 2 – Textiles, Fashion and Design (40 marks)

Candidates selecting this elective must answer 2(a) and either 2(b) or 2(c)

2.(a) Imelda May's distinctive rockabilly style is iconic to the core and bold in its delivery – 50s all the way.



(i) Evaluate the design of the dress shown in the diagram above.

Refer to:

- comfort
- aesthetic appeal
- current fashion trends.

(15)

3 points @ 5 marks each (1 reference to each)

***Comfort* - a figure-hugging dress comfortable to wear; allows for body movement while maintaining shape; stretch fabric; modest below knee length; etc.**

***Aesthetic appeal* - overall appearance of garment; black and white stripes create a striking effect; etc.**

***Current fashion trends* - there is a revival of vintage fashion on the high street, in fashion magazines and on the catwalks; overall look enhanced by jewellery, scarves, court shoes; a wide belt to focus attention on the waist, creating an hourglass shape; etc.**

(ii) Discuss the significance of the elements of design when choosing clothing to flatter body size and shape. (10)

2 elements @ 5 marks each

***Colour* - colour can change the perception of the person wearing the garment e.g. appear taller, thinner, rounder; etc. darker colours can reduce the size of a person while light colours can increase it; colour can be used to highlight details of a garment, e.g. the pleats, cuffs; etc. warm colours are stronger than pale colours; neutral colours such as black, white and cream are easy and comfortable to wear; they also blend easily with other colours; repetition of a colour will emphasise direction and line; harmonising colours are easy to wear and to look at; etc.**

Shape - the shape of a garment should accentuate positive body features and detract from negative ones; shape can have the following effect - narrow rectangular shapes have a slimming effect; boxy rectangular shapes will increase width and reduce height; triangular shape, (i.e. where the garment is wider at the top than at the bottom) the width on the top half can have a slimming effect on the overall appearance; etc.

Line - encloses and divides space, creating shapes and forms; seam lines divide and enclose space on a garment; there are four main types of structural lines - curved, romantic, feminine, graceful; diagonal - active, movement, dramatic; horizontal – widens, restful, relaxed, casual; vertical – lengthens; conservative; structural lines can be used to enhance balance and to direct or focus the eye, can create optical illusions; etc.

Texture - used to create surface appearance; refers to the material that something is made of; texture is both visual and tactile; the texture refers to the feel of the fabric - it can be rough, smooth, silky, shiny, fine, thick; rough texture will absorb light while smooth shiny texture will reflect it; this can affect the colour and the visual impact of the garment; shiny smooth fabrics can make a person appear heavier, dull fabrics will have the opposite effect; etc.

Pattern - is the repetition of line and shape; herringbone, zig-zag, polka dot; etc.

and

- 2.(b) (i) Name **and** describe a fabric construction technique suitable for cotton fabric. (9)

Name = 3marks, 2 points @ 3 marks each

Weaving- weaving is done on a loom; lines of yarn called selvage or warp threads are stretched down the loom; another set of threads called weft threads are passed over and under the warp threads from side to side; the simplest weave is called plain weave; etc.

Knitting - done by hand or machine; knitting is linking or interlocking loops of yarn together; knitted fabrics are stretchy, comfortable, crease resistant; 2 basic stitches used plain and purl; etc.

- (ii) Give details of one functional fabric finish applied to enhance fabric performance. (6)

2 points @ 3 marks each

Brushing: makes fabric warmer by giving them a fluffy finish that traps air which acts as insulator; etc.

Crease-resistance: easy care; creases fall out easily; etc.

Shrink-resistance: fabrics do not shrink and are easy care; etc.

Stain-repellent: Scotchguard - makes fabric resist stains; etc.

Water proofing: Scotchguard - stops water soaking into fabric; etc.

Flame-proofing: makes fabric harder to burn; etc.

Others: moth proofing and polishing; etc.

or

2.(c) Irish fashion and textile designers enjoy worldwide recognition.

- (i) Discuss the challenges encountered by the clothing and textile industry in Ireland. (9)

3 points @ 3 marks each

Global recession; less disposable income; increase in cheaper goods imported; high labour costs for skilled workers; adapting to new trends in shopping e.g. online and mobile technology; China the world's factory – cheaper/faster labour; rise of discount stores (low price, high volume); tragedies in Bangladesh – efforts to raise safety standards in garment factories; etc.

- (ii) Outline the work of **one** Irish designer in promoting Irish fashion. (6)

Name = 2 marks, 1 point @ 4 marks

John Rocha, Philip Treacy, Lainey Keogh, Paul Costelloe, Louise Kennedy, Sybill Connolly, etc. Designing for royalty, world leaders, celebrities; designing for major events – Riverdance costumes; etc.

Elective 3 – Social Studies (80 marks)

Candidates selecting this elective must answer 3(a) and either 3(b) or 3(c)

3.(a) The drive to promote lifelong learning, and create a learning society, is at the heart of education policy developments within the European Union.

- (i) Describe the provision of education in Ireland today with regard to adult and second chance education. (20)

4 points @ 5 marks each

Many opportunities for people of all ages and educational levels because government policy is to develop a culture of lifelong learning; Aontas (Irish National Association of Adult Education) promotes development of learning, and supports and co-ordinates adult education; adult education is available in full-time, part-time, modular, day, evening or weekend courses; Third-level colleges/universities run Adult literacy schemes providing basic literacy courses; Distance learning; ETB's/VEC's run evening courses; PLC courses are run in many 2nd level schools; SOLAS provides a range of training and employment programmes; VTOS offers a range of courses designed to meet the educational needs of unemployed people; Teagasc; Coillte; etc.

- (ii) Analyse the considerations that adults may take into account when deciding to return to education. (20)

4 points @ 5 marks each

Availability of courses; finding a course suitable to their needs; skills acquired, qualifications achieved; personal/professional development increase chances of gaining employment / promotion; cost, affordability; fear of failure; balancing responsibilities; supports available (tutors, grants), commuting distance; stages of family; etc.

- (iii) Name **and** give details of one contemporary initiative aimed at improving equality of opportunity in education. (10)

Name: 4 marks, 2 points @ 3 marks each

The National Adult Learning Council (NALC) – was established to meet the requirements of the National Action Plan for Social Inclusion 2007-2016; etc.

Aontas – helps promote the development of learning in adults; it provides advice and support in all areas of adult education; etc.

VTOS – open to the long term unemployed over 21 years of age; offers skilled-based programmes to help people return to employment; training allowances are granted similar to social welfare entitlements; etc.

Bluebrick – online resource that can be used to search for accredited courses offered by the IT's; it also offers the facility to compare the various courses to help the user decide which course is best for them; etc.

Springboard – is an initiative giving job seekers the opportunity to study a part-time course in higher education; free of charge, without losing their social welfare benefits; etc.

Youthreach – for 15 to 20 year olds who have left school without qualifications; two year integrated training and education programme; participants receive a training allowance; many centres located around the country including traveller training centres and community training workshops based in local communities; etc.

Solas – provides community training workshops for adults; etc.

PLC courses – offer training with work experience; means of accessing further education; variety of courses; FETAC certification; etc.

BTEA – funded by Dept of Social Welfare; unemployed for 15 months and over 21; full time or part time; receive social welfare payments and a small grant; etc.

Community Education Schemes – adult literacy initiative; etc.

HEAR – higher education access route to enable students from disadvantaged backgrounds (who meet a range of pre-defined indicators) to attend third level colleges on a reduced points basis; supports are put in place for them in college; etc.

DARE – disability access route to education for those with a disability e.g. dyslexia, DCD, blind, deaf, autistic, etc.; reduced points; receive on-going support in college; etc.

and

3.(b) Social change has had a major impact on family life in Ireland today.

Discuss this statement in relation to:

- changing attitudes to marriage (10)

2 points @ 5 marks each

Changing attitudes to marriage – people cohabiting first, marrying later; civil partnership for same gender couples; declining influence of catholic church – increasing popularity of civil ceremonies; increase in divorce and separation rates; social acceptance of marital breakdown; etc.

- changes in traditional roles within the family (10)

2 points @ 5 marks each

Traditional roles within the family – women working outside the home; high levels on unemployment among males; stay at home fathers more common; egalitarian roles; women better educated and financially independent; maternity and paternity leave available to parents; corporal punishment socially and legally unacceptable; role conflict, role overload as mothers and fathers try to cope with their ageing parents needs along with their children's needs; etc.

- the impact of modern communications technology. (10)

2 points @ 5 marks each

Impact of modern communications technology – young children skilled in IT; social media teenagers - facebook, twitter, snapchat, instagram positive and negative effects; etc. increase in mobile phones; popularity of computer apps. some addictive others very educational; communication via Skype; ease of accessing information; etc.

or

3.(c) Volunteering is the commitment of time and energy for the benefit of society and local communities.

- (i) Discuss, giving examples, the role of voluntary work in the community. (18)

3 points @ 6 marks each

Voluntary workers supply a wide range of services to disadvantaged and underprivileged groups e.g. elderly: voluntary organisations complement the work carried out by statutory bodies but offer a more local and personal service when state funding is lacking or inadequate; voluntary organisations organise and run services which should otherwise have been provided by the state; much voluntary work is preventative in nature i.e. issues can be dealt with quickly before these issues become major social problems; voluntary organisations can assert influence by highlighting social problems, attracting media attention and can therefore initiate change and social reform; voluntary workers offer advice in the development of government policies and legislation; etc.

- (ii) Evaluate the benefits to be gained from voluntary work by the volunteer. (12)

3 benefits @ 4 marks each

Volunteer – work is rewarding; aids personal development in terms of organisational and communication skills; affords workers an opportunity to see life from other perspectives thereby cultivating altruistic traits; voluntary workers build relationships with co-workers and with those who seek help; etc.

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Coimisiún na Scrúduithe Stáit
State Examinations Commission

LEAVING CERTIFICATE 2014

MARKING SCHEME

HOME ECONOMICS – SCIENTIFIC AND SOCIAL FOOD STUDIES COURSEWORK

In developing the marking schemes the following should be noted:

- *In many cases only key phrases are given which contain information and ideas that must appear in the candidate's answer in order to merit the assigned marks*
- *The descriptions, methods and definitions in the scheme are not exhaustive and alternative valid answers are acceptable*
- *The detail required in any answer is determined by the context and the manner in which the question is asked, and by the number of marks assigned to the answer in the examination paper. Requirements and mark allocations may, therefore, vary from year to year.*
- *Words, expressions or phrases must be correctly used in context and not contradicted, and where there is evidence of incorrect use or contradiction, the marks may not be awarded. Information must be presented under the appropriate headings.*

Grading Table

Grade	Mark bands
A1	360
A2	340
B1	320
B2	300
B3	280
C1	260
C2	240
C3	220
D1	200
D2	180
D3	160
E	100
F	40
N.G.	Less than 40

*To calculate weighted mark -- divide the raw mark awarded by 5.
(Round down any part marks e.g. 324 = 64)*

Food Studies Practical Coursework General Marking Criteria

Investigation: Analysis/Research - 30 marks

Research and analysis

= 20

Band A 16-20 marks (very good – excellent)

Investigation

- shows evidence of a **thorough exploration** and **comprehensive analysis** of all the issues and factors directly relevant to the key requirements of the assignment
- is accurate, derived from a range of sources and presented coherently
- uses evidence from research as basis for making relevant choices in relation to selection of menus/dishes/products

Band B 11-15 marks (very competent – good)

Investigation

- shows evidence of **exploration** and some **analysis** of the issues and factors which are generally relevant to the key requirements of the assignment
- is accurate, derived from a range of sources and presented coherently
- uses evidence from research as basis for making relevant choices in relation to selection of menus/dishes/products

Band C 6-10 marks (basic to competent)

Investigation

- shows evidence of **exploration** of the issues and factors which are generally relevant to the key requirements of the assignment
- is reasonably accurate, derived from a range of sources and presented coherently
- uses evidence from research as basis for making choices in relation to selection of menus/dishes/products

Band D 0-5 marks (very basic – limited)

Investigation

- shows evidence of a **very basic and limited understanding** of the key requirements of the assignment
- some or all of the information is vague and accurate only in parts, presentation lacks coherence
- uses evidence from research as basis for making choices in relation to selection of menus/dishes/products

All Assignments. - 2 two course meals / 2 dishes / 2 products / menu for day

= 4

If dish prepared is not investigated -1 / -2 marks in Investigation.

(menu – starter/desert = 1 mark, main course = 1 mark)

suitable meals / dishes / products having regard to factors identified and analysed in the investigation

Menus/main course/dishes must be balanced – accept 3 out of 4 food groups

Reasons / selection criteria - (2 x 2 marks)

= 4

clearly indicate criteria that determined choice of dish or product selected to prepare.

Sources including source of recipe - 2 x 1 mark (2 marks)

= 2

Preparation and Planning - 6 marks

- Resources (ingredients incl. costing, equipment) = 3
 - *main ingredients, unit cost, key equipment used as determined by dish (expect cost for all except AOP E)*
- Time allocation / Work sequence = 3
 - Preparation, sequence of tasks, evaluation
 - Band A 3 marks - all key steps identified, correct sequence*
 - Band B 2 marks - some key steps identified or sequence incorrect*
 - Band C 1 mark - few key stages identified and sequence incorrect*

Implementation - 28 marks

- Outline of the procedure followed to include food preparation processes, cooking time /temperature, serving /presentation, tasting/evaluation. = 16
(Information / account should be in candidate's own words)
Band A 13 - 16 marks (very good – excellent)
All essential stages in preparation of dish identified, summarised and presented in candidate's own words, in correct sequence with due reference to relevant food preparation process/es used
Band B 9 -12 marks (very competent – good)
Most essential stages in preparation of dish identified, summarised and presented in correct sequence with due reference to relevant food preparation process/es used
Band C 5 - 8 marks (basic to competent)
Some essential stages in preparation of dish identified, summarised and presented in correct sequence with due reference to relevant food preparation process/es used
Band D 1-4 marks (very basic – limited)
Few or any essential stages in preparation of dish identified, summarised and presented in sequence with due reference to relevant food preparation process/es used
- Key factors considered** (must relate to specific dish / test) 2 x 4 marks = 8
Identification (2) and clear explanation of importance (2) of two factors considered which were critical to success of dish
- Safety/hygiene** 2 x 2 marks = 4
(must relate to specific ingredients being used / dish being cooked)
*Identification (1) and explanation (1) of **one** key safety issue and **one** key hygiene issue considered when preparing and cooking dish/conducting test*

Evaluation - 16 marks

Evaluate the assignment in terms of:

- Implementation** 2 x 4 marks each = 8
Band A -4 marks - identified and analysed specific weaknesses/strengths in carrying out the task, modifications, where suggested, were clearly justified, critical analysis of use of resources / planning
Band B- 3 marks - identified weaknesses / strengths in carrying out task, some justification of proposed modifications, limited analysis of use of resources / planning
Band C- 2 mark - some attempt made at identifying weaknesses or strengths in completion of task, modifications where suggested not justified, reference made to use of resources / planning
- The **specific requirements** of the assignment 2 x 4 marks each = 8
Band A 4 marks - draws informed conclusions in relation to two key requirements of the assignment
Band B 3 marks - draws limited conclusions in relation to two key requirements of the assignment
Band C 2 mark - summarises two outcomes in relation to the assignment

Area of Practice A – Application of Nutritional Principles

Assignment 1

Healthy meal plans do not have to be complicated or expensive and should be suitable for the whole family to enjoy.

With reference to this statement, research and elaborate on the nutritional needs and the meal planning guidelines that should be considered when planning meals for a family with a range of different dietary needs and a limited food budget.

Bearing in mind these considerations, investigate a range of main course dishes suitable for the main meal of the day for this family.

Prepare, cook and serve **one** of the main courses that you have investigated.

Evaluate the assignment in terms of **(a)** implementation and **(b)** the specific requirements of the assignment.

Key requirements of the assignment

- *dietary/nutritional needs that should be consider when planning meals for a family with a range of different dietary needs and a limited food budget*
- *relevant meal planning guidelines with specific reference to a family with a range of different dietary needs and a limited food budget*
- *range of main course dishes suitable for the main meal*
- *main course dish and reasons for choice.*

Investigation

Dietary / nutritional requirements – *nutritional balance, daily requirements of macro / micro nutrients including protein / cho / fat / iron / calcium requirements as appropriate to the needs of a family with a range of different dietary needs(age, activity levels, health status) and a limited food budget with reasons for possible variations, high fibre, Vitamin C / iron absorption, Vitamin D / calcium absorption, need to increase Vitamin B group for release of energy and metabolism, possible variations in energy requirements, energy balance vis a vis activity levels, current nutritional guidelines re nutrient and food intake; etc.*

Meal planning guidelines – *use of food pyramid to ensure balanced meals, variety of foods, personal likes and dislikes, correct fluid intake to prevent dehydration - 8 glasses of fluids per day; foods will be determined by dietary needs e.g. high fibre foods – constipation and bowel disorders; increased calcium – osteoporosis; avoid foods high in salt – high blood pressure; avoid saturated fat and sugar i.e. convenience foods – obesity, coronary heart disease, etc.; avoid all foods that contain wheat – coeliac; diabetic – avoid sugar, eat regular meals; vegetarian – avoid meat /meat products depending on the type of vegetarian diet; if choosing convenience foods choose fortified foods; choose healthy snacks; use of foods in season – resource issues with particular reference to foods that are relatively inexpensive but are nutritionally balanced – own brand foods, special offers, bulk buying; choice of cheaper protein foods e.g. use of meat substitutes and meat extenders; use of energy efficient methods of cooking e.g. microwave, steamer, making full use of oven; avoid convenience foods as they are more expensive – make your own cakes, bread etc.; use of leftovers to avoid waste; cook extra portions for freezing; time available for preparation; etc.*

Dishes selected - range of main course dishes

- **must be suitable for range of different dietary needs and limited food budget**
- **must be a main course.**

Evaluation (specific requirements of assignment)

Analysis of findings regarding the nutritional requirements of a family with a range of different dietary needs and a limited food budget.

Meal planning guidelines – range of main course dishes suitable for a family with a range of different dietary needs and a limited food budget, how the selected dish meets the requirements as identified in the investigation.

Assignment 2

Research from the World Health Organisation has found that Ireland has the highest death rate from heart disease in people under 65 in the EU.

With reference to the above statement, identify the risk factors associated with poor cardiovascular health. Research and elaborate on the nutritional needs and the meal planning guidelines that should be considered when planning and preparing meals for people with this condition.

Having regard to the factors identified in your research, write a menu (three meals) for **one** day for a person who wishes to improve his/her cardiovascular health.

Prepare, cook and serve the main course of the main meal of the day.

Evaluate the assignment in terms of **(a)** implementation and **(b)** the specific requirements of the assignment.

Key requirements of the assignment

- risk factors associated with **poor cardiovascular health**
- dietary/nutritional requirements when planning meals for **people with poor cardiovascular health**
- relevant meal planning guidelines
- menu (three meals) for **one** day
- chosen main course dish and reasons for choice.

Investigation

Risk factors associated with poor cardiovascular health: e.g. family history, ethnicity, age, smoking, high blood pressure, high cholesterol, obesity, diabetes, physical inactivity, unhealthy diet e.g. high intake of saturated fat and salt, harmful use of alcohol, certain medicines, increased stress levels; etc. arteriosclerosis, angina, heart attack/coronary thrombosis, heart disease, stroke, aneurisms, sudden death, etc.

Dietary practices / nutritional requirements when planning meals for people with poor cardiovascular health: nutritional balance, daily requirements of macro / micro- nutrients including protein / cho / fat / iron / calcium requirements as appropriate, increase polyunsaturated fats, increase fibre, vitamin C / iron absorption, vitamin D / calcium absorption, vitamin B, follow current nutritional guidelines re nutrient and food intake; etc.

Meal planning guidelines – use of food pyramid to ensure balanced meals, plan well balanced meals; reduce intake of salt, avoid convenience foods, read food labels and avoid processed foods that contain hidden fats and salt; reduce intake of saturated fats as the body can convert saturated fats into cholesterol, choose low fat products, limit the use of hydrogenated or partially hydrogenated foods – choose tub margarine rather than block, increase polyunsaturated fats as they counteract the effect of cholesterol on the lining of arteries, lower triglycerides intake, increase intake of omega 3 rich foods; reduce intake of refined carbohydrate foods such as bread and cereals, increase fibre intake e.g. fruit and vegetables – helps to lower LDL; avoid foods naturally rich in cholesterol e.g. liver, kidney and some shell fish, choose low cholesterol foods; consider peoples likes and dislikes; choose fat free cooking methods e.g. steaming, poaching, baking, grilling, etc.; choose pure vegetable oils e.g. olive oil, rapeseed oil or canola oil; modify traditional recipes e.g. replace salt with herbs for flavour; include functional foods in meal planning; use soya protein products; etc.

Dishes selected - menu (three meals) for **one** day

- should meet the nutritional requirements as identified for people with poor cardiovascular health
- must be a main course dish

Evaluation (specific requirements of assignment)

Analysis of findings regarding what you learned from the investigation regarding the management of a diet for people with poor cardiovascular health, factors that should be considered when planning meals for people with poor cardiovascular health to ensure nutritional adequacy, what foods are suitable/unsuitable, what special aspects of meal planning have to be considered etc., how the selected dish meets the requirements as identified in the investigation.

Area of Practice B – Food Preparation and Cooking Processes

Assignment 3

Gelatine (gelatin) has a wide range of uses both culinary and in food manufacture.

Carry out research on *gelatine* in relation to each of the following:

- what is gelatine and the types available
- how gelatine is used in food preparation
- dishes that illustrate the use of gelatine
- the key points that should be observed to ensure success when using gelatine.

Prepare and make **one** of the dishes from your research.

Evaluate the assignment in terms of **(a)** implementation and **(b)** the advantages and the disadvantages of using gelatine.

Key requirements of the assignment

- *what is gelatine* - *types of gelatine available*
- *how gelatine is used in food preparation* - *dishes that illustrate the use of gelatine*
- *key points that should be observed to ensure success when using gelatine*
- *chosen dish and reasons for choice*

Investigation

What is gelatine: *colourless, tasteless, odourless substance made from protein derived from beef and veal bones, tendons and connective tissue; commercial gelatine is a by-product of pig skin; used as a gelling or setting agent in sweet and savoury cookery; it is an irreversible hydrolyzed form of collagen; etc.*

Types of gelatine available: *powdered gelatine, leaf (sheet) gelatine, agar-agar which has similar properties to gelatine but comes from seaweed, isinglass extracted from the air bladders of fish, etc.*

How gelatine is used in food preparation: *leaf gelatine: soak in cold water, if soaking more than one sheet separate them in the water, completely cover the gelatine, soak until gelatine blooms (expands) and goes wrinkly 5 - 10 minutes, several sheets together take longer, remove gelatine from water, squeeze between fingers to remove excess water; melt slowly over a gentle heat - 35C; add to cold ingredients; etc.*

powdered gelatine: sprinkle powder into a bowl containing 2-3 tablespoons of liquid – water/recipe liquid, stir and leave until the gelatine has soaked up the liquid 5 – 10 minutes; place the bowl in a saucepan of barely simmering water, allow gelatine to dissolve completely and turn transparent; strain to extract any bit of skin that may have formed if necessary; add to cold mixture stirring well; quick method using microwave; etc. gelatine may be used for thickening, setting, glazing, clarifying; etc.

Dishes that illustrate the use of gelatine: *chilled soufflés, mousses / moulds (sweet & savoury), bavarois, ice creams, marshmallows, blancmange, jelly chews, pate, savoury pies, pressed chicken, meat moulds, jellies; etc.*

Key points that should be observed to ensure success when using gelatine:

Boiling destroys gelatine's ability to set, use lowest temperature possible to dissolve it and heat for the shortest time; do not use with fruits that contain protein-splitting enzymes e.g. pineapple, kiwi as they prevent gelatine setting - cook first to deactivate the enzymes; too much sugar can inhibit gelling; dairy products strengthen gelling process; salt, fruit juices and wine(ph below 4) lower the strength of gelatine – increase the amount of gelatine used; gelatine takes twice as long to dissolve if used with cream or milk; leaf gelatine if not soaked properly the use will be diminished; do not soak leaf gelatine for too long – it will start to break down and disintegrate; chill the mixture to a consistency of cold egg white before adding gelatine to help suspend fruits, meat, vegetables; drain all solids of their liquid before adding gelatine; add gelatine from a height and stir while adding to avoid streaks of gelatine forming; to unmould easily – spray mould with oil, rinse with cold water or dip mould in warm water for 5 – 10 seconds; store gelatine deserts in a covered container to avoid the formation of a rubbery skin on the surface; etc.

Dishes selected – must show the use of gelatine

Evaluation (as specified in assignment) – *the advantages and the disadvantages of using gelatine.*

Area of Practice C: Food Technology

Assignment 4

Consumer demand for artisan/speciality food is highlighted by the rise in the number of farmers' markets across the country. Preserved foods are popular choices especially homemade pickles.

Carry out research on making pickles in relation to each of the following:

- the different vegetables and combinations of vegetables that can be used
- how this method of preservation is carried out and the underlying principles involved
- the possible problems which may arise.

Prepare and make a pickle of your choice. Include details of the container and labelling you used.

Evaluate the assignment in terms of **(a)** implementation **(b)** the practicability of making pickles at home.

Key requirements of the assignment

Investigate:

- *the different vegetables and combinations of vegetables that can be used when making pickles*
- *how the method of preservation is carried out* - *the underlying principles involved*
- *suitable container and labelling used* - *the possible problems that may arise*
- *chosen product and reasons for choice*

Investigation

Research on different vegetables and combinations of vegetables that can be used.

Cauliflower, cucumber, onions, red cabbage, gherkins, mushrooms, tomatoes, garlic, artichokes, zucchini, green beans, asparagus, peppers, horseradish, etc. combinations e.g. cucumber and onion; cauliflower, cucumber, radishes and garlic; etc.

How the method of preservation is carried out: *e.g. pickles can be preserved in vinegar or a salt brine/dry salt; vegetables prepared according to type; cook if required; place in bowl and sprinkle with salt between layers/submerge in brine solution; put aside for required time; dissolve sugar in vinegar hot/cold; addition of other ingredients; rinse vegetables to remove salt if necessary; drain, boil (depends on vegetable used); place in sterilised jars, pack well, pour hot/cold vinegar over, release air bubbles; cover, label, date; pickles can be stored for a few weeks in fridge or years depending on the method used; etc.*

The underlying principle involved: *e.g. low ph of the acid in the vinegar inhibits the growth of micro organisms; salt preserves the vegetables by lowering the amount of 'free' water molecules available, salt draws water and carbohydrate from the tissues of the vegetables and also toughens them slightly changing the texture as vegetable softening enzymes are deactivated, salt/brine causes fermentation – growth of good bacteria makes foods less vulnerable to spoilage causing bacteria; 10% salt solution needed if food is to last for years; anaerobic fermentation in brine to produce lactic acid, - gives pickles their characteristic flavour and colour change(colours become stronger), products of fermentation lower the ph, inhibit the growth of microorganisms; etc. Fresh Pack process – pickles produced are not fermented as they are placed in brine solution for few hours only and then added to boiling vinegar and pickling spices – heat kills the micro organisms; spices penetrate the food and add flavour; sealed in sterilised jars to remove oxygen; etc.*

Possible problems that may arise

Dark or discoloured pickles: *e.g. vinegar and salt can react with galvanized metal and produce toxic substance, cider, malt or wine vinegar may darken the pickle; etc. soft pickles: vinegar too weak – less than 5% or insufficient amount of brine used; etc. white sediment in the jar: salt e.g. iodized salt or table salt used contains an anti caking agent – must use pure salt; etc. keeping quality of the vegetables affected: boiling for too long causes loss of acetic acid; etc. bacteria growth: if vinegar with a minimum level of acid is used; etc. hard outer coat: salad cucumbers are coated with wax so must be scored; etc.*

Suitable containers and labelling *e.g. kilner/glass jars, screw top lacquered / plastic coated lids, vinegar proof paper, freezer grade polythene, labels; etc.*

If no packaging investigated – 3 marks

Dishes selected – pickle.

Evaluation (as specified in assignment) *Practicability of making pickles at home – resource issues –cost, time, skills, equipment, packaging, storage; etc.*

Area of Practice D – Dishes illustrating the Properties of a Food

Assignment 5

Denaturation of protein occurs during food preparation and cooking.

Carry out research on the causes of protein denaturation and explain the underlying principle in each case. Identify a range of dishes that illustrate protein denaturation. Dishes investigated should illustrate different methods of denaturation.

Prepare, cook and serve a dish of your choice that you have investigated that demonstrates protein denaturation.

Evaluate the assignment in terms of **(a)** implementation and **(b)** the effects of protein denaturation on the dish prepared.

Key requirements of the assignment

- *the causes of protein denaturation*
- *the underlying principle in **each** case*
- *range of dishes to illustrate different methods of protein denaturation*
- *chosen dish and reasons for choice.*

Causes of protein denaturation

Caused by physical and chemical means e.g. heat, acids, enzymes, salt, mechanical action/agitation.

The underlying principle in each case

Denaturation occurs during food preparation, it is usually irreversible; as a result of denaturation the unfolded protein chains bond with each other forming clumps; it involves a change in the tertiary / secondary structure, and the result is the setting/hardening of the protein food which is known as coagulation.

Coagulation is caused by:

Heat: *e.g. protein coagulates when heated – egg white coagulates at 60°C, egg yolk at 68°C; colour changes from transparent to opaque; etc. moist heat:* *changes the collagen to gelatine thereby tenderising meat; myoglobin in meat causes its colour to change from red to brown; over cooking makes food indigestible; milk protein casein shrinks and forms a skin on the surface; etc. dry heat:* *causes shrinkage and toughening of muscle tissue with loss of moisture resulting in a dry texture; etc.*

Acids: *bacteria present in milk ferment the lactose when milk sours, producing lactic acid, ph of milk is lowered; protein caesinogen coagulates; lemon juice / vinegar cause milk to curdle; and the acid vinegar used in marinades denatures the protein in meat; the addition of heat in cooking with the acid leads to slow tenderising of the muscle in meat; etc.*

Enzymes: *the enzyme rennin coagulates milk protein in the stomach, rennet used to form the curd in the manufacture of cheese, proteolytic enzymes e.g. papain, bromelin and ficin when sprinkled on the surface of meat cause a slow tenderisation of the muscle of the meat, etc.*

Salt: *sodium chloride coagulates some proteins e.g. in cheese making salt is added to the curd to increase firmness, etc.*

Mechanical action/agitation *whisking of egg white causes a partial coagulation of the protein; the protein chains unfold and line up around the air bubbles entrapping air which results in the formation of a foam; whisking produces heat which sets the egg white slightly; etc.*

Range of dishes/products to illustrate different methods of denaturation

Heat: *egg custard, sponge cake, quiche, beef stew, boiled bacon, roast chicken, grilled meats, etc.*

Acids: *marinated meats, fish, vegetables, etc.*

Enzymes: *cheese, marinated meats, etc.*

Salt: *cheese, etc*

Mechanical action/agitation: *meringues, soufflés, mousses, etc.*

Dishes selected – must show protein denaturation

Evaluation (as specified in assignment)

The effects of protein denaturation on the dish prepared, i.e. the effect of coagulation, mechanical action/agitation, heat, acids, enzymes or salt on the dish prepared, etc.

Area of Practice E: Comparative Analysis including Sensory Analysis

Assignment 6

Ireland has the highest per capita consumption of chocolate in the world with Irish consumers eating on average 11.2 kg of chocolate confectionary each year.

Research and evaluate the range of chocolate (milk/dark/white) bars available in Ireland.

Include reference to brands, cocoa content, price etc.

Using **three** different brands of milk chocolate carry out a **preference ranking test** to determine which brand of chocolate is the preferred choice within your group.

Evaluate the assignment in terms of **(a)** implementation and **(b)** the test results obtained.

(i.e. an analysis of the factors that may contribute to the test results obtained).

Key requirements of the assignment

- research on **the range of chocolate (milk/dark/white) bars** available in Ireland
- **selected product** of your choice and reasons for choice
- **preference ranking test**
- conditions to be controlled during testing.

Investigation

= 20

- Research / Investigation of products appropriate to the testing
i.e. investigate the range of chocolate (milk/dark/white) bars available in Ireland - brands, cocoa content, price, etc.
- **Preference ranking test**

Description: tester is presented with a number of coded samples, tester ranks samples in order of preference, etc.

Aim of test: to determine which of three brands of chocolate is preferred by testers, etc.

Possible outcomes: to assign an order to the samples according to people's preference.

- **Identification of the conditions to be controlled during the testing**

Conditions specific to the assignment e.g. size, shape and colour of containers used for testing, temperature of samples, similar quantities in each sample, coding of samples, hygiene, timing, where testing takes place, dietary considerations, etc.

- **Selected dish/product and selection criteria**

Selected products – milk chocolate bars

(3 products)

= 4

State reasons for choice.

(2 reasons @ 2 marks each)

= 4

Sources – 2 x 1 mark (2 marks)

= 2

Preparation and Planning

- **Resources**
- **Main equipment needed to carry out assignment**

= 3

Preference Ranking Test – 6 trays, 6 glasses of water, 18 coded containers, 6 samples of food A, 6 samples of food B, 6 samples of food C, 6 score-cards, 1 record sheet, pen etc.

Work sequence

= 3

Preference Ranking Test: code containers, set up trays, put chocolate samples in containers, label score cards and record sheets, follow instructions on score cards, carry out preference ranking test, collect score cards, transfer results onto record sheet, calculate results, reveal codes, present and evaluate results, tidy and wash up, etc.

Implementation

= 16

Procedure followed when carrying out this aspect of the assignment

The full sequence of implementation should be given and findings should be presented for the test i.e.

Preference Ranking Test (three products)

Code 18 containers, 6 containers with symbol □, 6 containers with symbol ◇, 6 containers with symbol ○, put chocolate samples in each container, set up 6 trays numbered 1-6, each tray has one container labelled with symbol □, one container with symbol ◇, one container with symbol ○, testers follow instructions on score card, taste each sample, indicate preference by placing 1st choice beside sample most preferred, 2nd choice beside next preference, 3rd choice beside the one least preferred, scorecards are collected by recorder and results transferred onto prepared record sheet, assign each choice a score value e.g. 1st choice – 3 points, 2nd choice – 2 points, 3rd choice – 1 point, when recording results calculate the score for each product – multiply the number of ticks in each box by the score value assigned to that choice, codes are revealed and results presented, results can be presented on bar chart/pie chart/table, tidy, wash up, etc.

- **Key factors considered (any 2 @ 4 marks each)**

= 8

*Key factors that may be considered in order to ensure success in this assignment include - conditions **controlled** during testing ... coding, choice of product used, sample temperature, uniformity of samples for testing, sufficient amounts, glass of water/or dry cracker included to cleanse the palate, importance of silence during testing, codes on each tray remain the same, product in the container changes, codes used should not induce any bias among testers, people involved in testing should not be involved in coding and arranging of samples or collating results, etc.*

(key factors must refer to the actual test carried out)

- **Safety and hygiene (one safety @ 2 marks + one hygiene @ 2 marks)**

= 4

***Safety:** testers with allergies – product with nuts etc, special diets e.g. diabetic, etc., products with additives / E- numbers etc.*

***Good hygiene** practice with regard to: preparation area and the testing area, handling of samples – use of plastic gloves / disposable glasses etc.*

Evaluation

- **Implementation (2 points x 4 marks each)**

= 8

Testing procedures used

Key factors when conducting the test

Safety and hygiene issues considered

Problems encountered and suggested solutions

Evaluate efficiency of work sequence

- **Specific requirements of the assignment (2 points x 4 marks)**

= 8

Students should evaluate the results obtained for the Preference Ranking test and draw some conclusions. The factors that may contribute to the test results obtained should be analysed.

Band A = 4 marks

Band B = 3marks

Band C = 2 marks

Appendix 1
General Instructions for examiners in relation to the awarding of marks.

1. Examination requirements:
Candidates are required to complete and present a record of **five** assignments for examination.
In respect of **Areas of Practice**, candidates must complete
Area A - **One** assignment
Area B - **One** assignment
Area C - **One** assignment
Area D - **One** assignment
One other assignment from either Area A or Area E
Where a **candidate completes five assignments and does not meet the examination requirements** as set out above, the examiner will mark the five assignments as presented and disallow the marks awarded for the assignment with the lowest mark from AOP A or E
 2. Each Food Studies assignment must include different practical activities.
Where a **candidate repeats a practical activity for a second assignment**, the examiner will mark the repeated practical as presented and disallow the marks awarded for the repeated practical activity with the lowest mark.
 3. Where a **candidate completes the investigation and / or the preparation and planning and / or the evaluation aspects of an assignment and does not complete the implementation**, the examiner will mark the completed aspects of the assignment as presented. However, marks for **evaluation of implementation**, where attempted, will be disallowed.
In relation to Assignments 3, 4, 5 and 6 **evaluation of specific requirements** will also be disallowed
 4. Where a **candidate completes the preparation and planning and/or the implementation and /or the evaluation aspects of an assignment, and does not complete the investigation**, the examiner will mark the completed aspects of the assignment as presented. However, marks for **evaluation of specific requirements of assignment**, where attempted, will be disallowed.
 5. Where the **dish / product prepared has not been identified in the investigation**, but fulfils the requirements of the assignment, deduct the relevant marks awarded (-1/-2) under meals /dishes/products in investigation and reasons for choice (4 marks).
 6. **Teacher demonstration** work is **not acceptable**, therefore no marks to be awarded for implementation and evaluation of implementation.
 7. **Dish** selected **not fully compliant** with requirements e.g.
 - An **uncooked dish** selected where a cooked dish specified
 - Dish **not suitable for people with poor cardiovascular health** - Assignment 2
 - **Gelatine not used** – Assignment 3, **dish selected does not show denaturation** – Assignment 5
 - Dish selected shows **few process skills**
 - Dish selected includes **over use of convenience foods**Deduct – 8 marks from total mark awarded for assignment and insert explanation as highlighted above.
 8. A **dish that does not meet the requirements of the assignment** e.g. a dessert dish prepared instead of a main course; no marks to be awarded.
 9. Where a teacher disallows a practical application, no marks are allowed for **Implementation and Evaluation of Implementation**. All other areas may be credited.
- NB All scenarios must be checked with advising examiner before being applied.**
When applying a scenario indicate by putting S. 7 - 8 marks with the relevant comment at the beginning of the assignment.

