



**Coimisiún na Scrúduithe Stáit**  
**State Examinations Commission**

**Leaving Certificate 2020**

**Marking Scheme**

**Home Economics – Scientific and 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.

# HOME ECONOMICS – SCIENTIFIC AND SOCIAL

## HIGHER LEVEL

### Marking Scheme

#### Instructions

- Section A** 60 marks  
Answer **ten** questions in this section.  
Each question carries 6 marks.
- Section B** 180 marks  
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** 40 or 80 marks  
Answer **one** elective question, to include **part (a)** and either **part (b) or (c)**.  
  
If you submitted *Textiles, Fashion and Design* coursework for examination, you may only attempt Question 2 from this section.  
  
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.*

Grading Table - Mark Total = 320/280


Grade	Mark Band Elective 1 & 3	Mark Band Elective 2
H1	288 - 320	252 - 280
H2	256-287	224 - 251
H3	224-255	196 - 223
H4	192-223	168 - 195
H5	160-191	140 - 167
H6	128-159	112 - 139
H7	96-127	84 - 111
H8	< 95	< 83

# Annotations used by examiners in marking

## Home Economics – Scientific and Social 2020

The annotated marks should be placed near the correct/partially correct response.

Colours of annotations may vary.

Annotation	Explanation
✓ 0	Zero marks awarded
✓ 1	<b>One</b> mark awarded
✓ 2	<b>Two</b> marks awarded
✓ 3	<b>Three</b> marks awarded
✓ 4	<b>Four</b> marks awarded
✓ 5	<b>Five</b> marks awarded
✓ 6	<b>Six</b> marks awarded
✓ 7	<b>Seven</b> marks awarded
✓ 8	<b>Eight</b> marks awarded
	Blank page or part of page
[ F	Excess work awarded full marks
[ P	Excess work awarded partial marks
<	Work not attempted

**Section A****60 marks**

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

Each question carries 6 marks.

Write your answers in the spaces provided.

1. Complete the following table in relation to carbohydrates.

**6 @ 1 mark** (graded 1:0)

	Chemical Formula	Example
Monosaccharides	$C_6H_{12}O_6$	<i>Glucose, fructose, galactose,</i>
Disaccharides	$C_{12}H_{22}O_{11}$	<i>Sucrose, lactose, maltose,</i>
Polysaccharides	$(C_6H_{10}O_5)_n$	<i>Starch, pectin, cellulose, glycogen.</i>

2. Outline how consumers have become more nutritionally aware and health conscious in their food choices.

**2 points @ 3 marks** (graded 3:2:0)

**1 reference** to nutritionally aware, **1 reference** to health conscious

- (i) *examining food labels; comparing nutritional information on products; consuming 5-7 a day; moving away from convenience and processed food; checking product origin; maintaining fitness through nutrition;*
- (ii) *choosing organic produce; looking for food traceability; purchasing healthier options; paying more for better quality; including variety in diets to include raw food, dairy free and vegan products; etc.*

3. State **two** functions of omega 3 fatty acids in the diet.

**2 functions @ 3 marks** (graded 3:2:0)

- (i) *lowers elevated triglyceride levels reducing the risk of heart disease and stroke; provides starting point for making hormones that regulate blood clotting; prevents stiffness and joint pain by boosting the effectiveness of anti-inflammatory drugs; lowers blood pressure; associated with healthy brain activity;*
- (ii) *reduces inflammation in asthmatics; may reduce symptoms of ADHD; visual and neurological development in infants; can fight depression and anxiety; eye health; healthy skin and hair; etc.*

4. The following health conditions may result from a vitamin deficiency in the diet. Identify **one** vitamin in each case.

**3 vitamins @ 2 marks** (graded 2:0)

Health Condition	Vitamin
Poor blood clotting	<i>Vitamin K, Vitamin C, Vitamin D,</i>
Neural tube defects	<i>Vitamin B (folate), Vitamin B12,</i>
Night blindness	<i>Vitamin A.</i>

5. State **two** functions of An Bord Bia (The Irish Food Board).

**2 functions @ 3 marks** (graded 3:2:0)

- (i) *a link between Irish food, drink and horticulture suppliers, existing and potential customers throughout the world; enabling the growth and sustainability of food producers; offers marketing services to food and drinks manufacturers to promote their products worldwide;*
- (ii) *issues Bord Bia quality marks on meat, eggs and horticulture; runs the Origin Green initiative, enabling food and drink manufacturers to commit to environmental sustainability in Ireland and abroad; etc.*

6. In relation to meat, explain each of the following terms:

**2 points @ 3 marks** (graded 3:2:0)

**Extractives:** *substances dissolved in the water of the meat fibres, give meat distinct flavour; improve the flavour of the meat; stimulate the secretion of saliva and gastric juices which aid meat digestion; etc.*

**Marinating:** *covering/soaking/steeping meat in a mixture of acid (wine, lemon juice /vinegar/yoghurt) and other ingredients e.g. oil, alcohol, salt, herbs, spices; breaks down the fibres and tenderises the meat; etc.*

7. Outline the process involved in the homogenisation of milk.

**3 points @ 2 marks** (graded 2:1:0)

*Milk is heated to 60°C; forced under pressure through a machine with tiny holes; breaks up the large fat globules; disperses them evenly throughout the milk; suspends the droplets in milk; etc.*

8. Classify artificial sweeteners and give **one** example in each class/type.

**2 classes @ 2 marks** (graded 2:0), **2 examples @ 1 mark** (graded 1:0)

Class/Type	Example
<i>Intense</i>	<i>Aspartame (Canderel), Saccharin (Hermesetas).</i>
<i>Bulk</i>	<i>Sorbitol, Mannitol.</i>

9. What information does each of the following symbols convey to the consumer?

**2 points @ 3 marks** (graded 3:2:0)



(www.repak.ie)

*Green dot is the license symbol; packaging suppliers have contributed to the funding for recovery and recycling of packaging waste; Repak (packaging compliance scheme) is the sole registered licensor of the Green Dot trademark for Ireland, only Repak companies carry this symbol; etc.*



(www.clearpak.com)

*Plastic packaging made from polyethylene terephthalate (PET); most common packaging for single-use bottled beverages etc.; have the identification number on the bottom, which makes them easier to identify different types of plastic in the recycling stream; most widely recycled plastic; etc.*

10. In relation to fabric detergents, explain the purpose of each of the following:

**2 points @ 3 marks** (graded 3:2:0)

- (i) **Enzymes:** *breakdown protein based stains e.g. milk, blood, egg, into smaller particles; making it easier for detergents to clean fabrics; inactivated at temperatures higher than 60°C; etc.*
- (ii) **Surfactants:** *reduce the surface tension of the fabric; allow fabric to become wet, dislodging the dirt from the fabric; contain a hydrophilic head and hydrophobic tail which reduces the surface tension of water; hydrophilic head attaches to the surface of the water, disrupting the bonding of water molecules and enabling them to thoroughly wet fabric; hydrophobic tail attaches itself to and loosens the dirt or stain on fabric and keeps the dirt particles suspended in the water; etc.*

11. Differentiate between the mortgage interest rates below.

**2 points @ 3 marks** (graded 3:2:0)

- (i) **Fixed rate:** *monthly repayments are fixed for a set period of time; repayments will not increase/decrease; fixed rates are available over different periods; etc.*
- (ii) **Variable rate:** *standard variable rates rise and fall, mortgage repayments can increase and decrease during the term of the mortgage; etc.*  
*Loan-to-value rate: rate is based on the amount owed on the mortgage relative to the market value of the property; etc.*  
*Tracker rate: rates are set at a fixed % or margin above the European Central Bank (ECB) rate and as this rises and falls, so does a tracker mortgage rate; etc.*

12. Describe how each of the following influence consumers when shopping.

**2 points @ 3 marks** (graded 3:2:0)

- (i) **Product placement:** *essential products placed at the back of the shop; products placed by association; special offers; attractive displays; non essentials at checkouts; etc.*
- (ii) **Loyalty schemes:** *points earned with each purchase; encourages store loyalty; accumulated points exchanged for money off coupons or as credit towards goods purchased; etc.*



**Section B****180 marks**

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.

Write your answer in the answerbook containing **Section A**.

**Question 1**

Consumer surveys confirm that large portion sizes are associated with overeating in both adults and children. The following table from a study carried out by *safefood* reveals participants' opinions on situations where it is difficult to manage food portion sizes.

Situations/Settings	Sometimes Difficult (%)	Always Difficult (%)	Never Difficult (%)
Eating in	45	7.5	47.5
Eating out	57.5	10	32.5
Eating at work	20	0	80
Eating with friends	62.5	2.5	35
Stressful situations	35	10	55
Lack of time	40	2.5	57.5
Special occasions	40	37.5	22.5
Eating late/after a night out	35	7.5	57.5
Eating while watching TV	50	2.5	47.5
Preparing a meal	20	5	75

([www.safefood.eu/media/safefoodlibrary](http://www.safefood.eu/media/safefoodlibrary))

- (a) With reference to **five** of the above situations/settings, suggest reasons why participants may/may not find it difficult to manage portion sizes. (20 marks)

**5 reasons @ 4 marks** (graded 4:3:2:1:0)

**Difficult:** portions large when purchasing processed food e.g. ready meals for one; individual confectionery items can be oversized; sizes of food packs for sharing; oversized tableware; dining out/friends/host, controls portion sizes served; portion size may not be stated on the label e.g. chocolate bars; unable to self-regulate; eating while watching tv; etc.

**Not difficult:** information on packaging gives portion size; restaurants use portion control methods; healthy eating guidelines easily accessible with advice on portion size and calorie content; preparing own food, control over portion sizes; etc.

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

- how a peptide bond is formed **4 points @ 2 marks** (graded 2:1:0)
  - essential and non-essential amino acids **4 points @ 2 marks** (graded 2:1:0)
  - supplementary value/complementary role. **4 points @ 2 marks** (graded 2:1:0)
- (24 marks)

**How a peptide bond is formed:** *two amino acids join together; results in the loss of a water molecule - **condensation** reaction; the **COOH** (carboxyl/acidic) group of one amino acid reacts with the **NH<sub>2</sub>** (amino group/basic) group of another; the **COOH** group loses an **OH** group; the **NH<sub>2</sub>** group loses a hydrogen (H) atom; the hydrogen and the OH group join together to form a water molecule that is lost; etc.*

**Essential and non-essential amino acids:** **essential amino acids** - cannot be manufactured by the body; 8 essential for adults, 10 essential for children; must be supplied by the diet; examples valine, leucine, isoleucine, lysine, methionine, threonine, phenylalanine, tryptophan, histidine, arginine; etc. **Non-essential amino acids** - can be made by the body; do not need dietary sources; examples alanine, asparagine, cysteine, glutamine, glycine, proline, serine, tyrosine; etc.

**Supplementary value/complementary role:** *the ability of a protein food to make good the deficiency of another protein food; low biological value (LBV) proteins are deficient in one or more essential amino acids; consuming two low LBV protein foods together (each lacking different essential amino acids) can ensure all essential amino acids are obtained; examples of complementary protein foods include beans on toast, hummus and naan, beans and hummus are low in methionine and high in lysine, toast and naan are low in lysine and high in methionine; etc.*

(c) Proteins have many functions in food production.

Explain the following in relation to protein and make reference to the culinary application of each:

- gel formation **4 points @ 2 marks** (graded 2:1:0)
- foam formation **4 points @ 2 marks** (graded 2:1:0) (16 marks)

**Gel formation:** *collagen when heated converts to gelatine; gelatine can absorb large amounts of water when heated; protein chain uncoils and water becomes entrapped; forms a sol; on cooling sol forms a gel, a semi-viscous solution that has a 3D protein matrix in which water molecules become trapped; culinary application – cheesecakes, soufflés, jelly sweets; etc.*

**Foam formation:** *when egg white is whisked, protein chains unfold and air bubbles form; protein chains entrap air, creating a foam; whisking creates small amount of heat, which begins to set the egg albumin forming a temporary foam; further heating/cooking is required to set as a permanent foam; culinary application – meringues, sponge cakes; etc.*

- (d) Devise a set of strategies for controlling food portion sizes when shopping for food, eating at home and eating out. (20 marks)

**4 strategies @ 5marks** (graded 5:3:0)

**(1 reference to shopping, 1 reference to eating at home, 1 reference to eating out + 1 other)**

**Shopping for food:** do not buy foods that you tend to overeat; make a list, buy only what is needed; check the number of portions in pre packed food; if buying treat foods buy snack sizes; buy food already packaged into portion controlled sizes; etc.

**Eating at home:** eat slowly; use a smaller plate; fill half of the plate with vegetables or salad; serve food on individual plates; freeze or chill left overs immediately to avoid second helpings; avoid eating while watching TV; look at portion size on the label; allow smaller portions for children; eat until satisfied; count calories; etc.

**Eating out:** if ordering high calorie food, choose smaller options; order half portions; have a starter as the main course; share dessert; stop eating when full; check calories on menus; etc.

## Question 2

Cereal products such as bread, pasta and rice are significant energy providers for the body.

- (a) Discuss the nutritional significance of cereals in the diet. (20 marks)

**5 points @ 4 marks** (graded 4:3:2:1:0)

**Protein:** LBV protein; protein gluten - wheat and rye; lysine, threonine, tryptophan and methionine present; can be deficient in some essential amino acids; growth and repair; cereals containing gluten cannot be digested by coeliacs; etc. **Fat:** polyunsaturated fat that contains essential fatty acids e.g. oleic acid; linoleic acid present in germ; beneficial in low-cholesterol diets; low in kilocalories; heat and energy; etc. **Carbohydrate:** excellent source of carbohydrates; starch 64% - energy; outer husk contains 8% fibre/cellulose, most of which is removed in the production of white flour - prevents bowel disorders; wheat bran and rolled oats have a low glycaemic index; etc. **Vitamins:** B group vitamins, B1 (Thiamine), B2 (Riboflavin) - metabolism of carbohydrates; B3 (Niacin) - healthy nerve activity; Vitamin E in germ - antioxidant; etc. **Minerals:** calcium - healthy bones; etc. non-haem iron; - supplies oxygen to cells; etc. phosphorus - works with calcium for healthy bones; etc. **Water:** low - hydration; etc.

- (b) Outline the stages involved in the processing of a cereal product of your choice. In your answer refer to production, packaging and labelling. (18 marks)

**Production: 6 points @ 2 marks** (graded 2:1:0)

**Packaging: 3 marks** (graded 3:2:0); **Labelling: 3 marks** (graded 3:2:0)

**Flour:** screening; cleaning; conditioning; blending; (wholegrain flour, bran and germ produced at this stage); break rolling; sifting and purifying; reducing rollers; air classifying; fortification /addition of additives; etc.

**Pasta:** made from endosperm of durum wheat; endosperm is ground into semolina flour; mixed with eggs, water, salt and oil to form a dough; dough is moulded into various shapes; other ingredients can be added for colour e.g. spinach; tomato puree, squid ink; moulded into different shapes; can be fresh or dried; etc.

**Packaging:** weighed; packed in paper, cardboard, plastic; glass; etc.

**Labelling:** type; brand name; best before date; quantity; nutritional information; specific dietary information; etc.

- (c) Explain the benefits of a diet high in fibre. (12 marks)

**3 benefits @ 4 marks** (graded 4:2:0)

Peristalsis speeds up passage of food and waste; prevents bowel disorders; prevents poisonous substances building up in the body; adds bulk to the diet, giving a feeling of fullness without adding calories; aids in achieving a healthy weight; controls blood sugar levels, slows the release of glucose into the blood which benefits diabetics; lowers blood cholesterol therefore reducing risk of CHD; etc.

### Question 3

Safe food storage and preparation practices help to prevent food waste and foodborne illnesses.

- (a) Discuss methods of good practice to ensure the safe preparation and storage of food in the home. (12 marks)

**4 points @ 3 marks** (graded 3:2:0)

**(1 reference to safe preparation, 1 reference to safe storage + 2 other points)**

**Preparation:** avoid over-handling food; wash hands before handling food; frozen meat and poultry should be thawed fully before cooking; avoid having food out of fridge for long periods during preparation; ensure surfaces and utensils are clean; good lighting and ventilation; HACCP; etc.

**Storage:** cover food before storage; check fridge/freezer temperature; check best before and use by dates; store perishable food below 5°C; store frozen food at -18°C; remove packaging from fruit and vegetables; cool cooked foods before storage; store perishable and chilled cooked food in fridge; store ready-to-eat food separate to raw food; store raw food on base of fridge; avoid over-packing the fridge; etc.

- (b) Describe **two** methods of home food preservation.  
In each case refer to:

- how the method of preservation is carried out. **(2 point @ 2 marks) x2**
  - the underlying principle **(2 points @ 3 marks) x2**
  - risk of food spoilage. **(1 point @ 3 marks) x2**
- (26 marks)

<b>Preservation method</b> <b>(2 points @ 2 marks) x2</b> (graded 2:1:0)	<b>Underlying principle</b> <b>(2 points @ 3 marks) x2</b> (graded 3:2:1:0)	<b>Risk of food spoilage</b> <b>(1 point @ 3 marks) x2</b> (graded 3:2:1:0)
<b>Freezing:</b> removal of warmth and moisture; ice crystals formed; blanching; freeze at -25°C, store at -18°C; etc.	Low temperatures inactive micro-organism growth; slow down enzyme activity; convert water to ice making it unavailable to microorganisms; blanching – high temperature inactivates micro-organisms and enzymes; food wrapped prior to freezing prevents re-entry of micro-organisms; etc.	Freezer burn/ discoloration; toughening; thawing and refreezing; etc.
<b>Heat treatments:</b> e.g. jam, chutney; etc.  Fruit and/or vegetables are boiled with a mixture of sugar, vinegar, spices; etc.	High temperatures destroy micro-organisms; inactivate enzymes; vinegar in chutney reduces pH so microbes cannot survive; high concentration of sugar/salt causes water to pass from bacterial cell by osmosis which destroys the bacteria; sealing in airtight containers prevents re-entry of micro-organisms; etc.	Incorrect concentration of sugar; jars not sealed properly; etc.

<b>Chemical preservation:</b> e.g. pickling etc. Fruit and/or vegetables are preserved in vinegar with sugar, salt and spices added; etc.	Chemical preservatives e.g. salt, sugar, acids etc. dissolve in the water of the food cells forming a concentrated solution; microbial cells are dehydrated by osmosis and destroyed; acids lower pH to a level unsuitable for microbial growth and enzyme activity; etc.	Incorrect concentration of vinegar; jars not sealed properly; etc.
<b>Dehydration:</b> removal of moisture from herbs, fruit, vegetables, meat; etc.	Water is evaporated from the cells of the food causing them to become dehydrated; fruit/vegetables are blanched before drying to inactivate enzymes; etc.	All moisture not removed from food; etc.
<b>Salting:</b> e.g. Dry salting - meat or fish covered with salt; flavourings e.g. sugar may be added etc. Brining - meat, fish or vegetables are steeped in a salt/water solution; excess water removed; etc.	Salt inhibits the growth of microorganisms by osmosis; concentrations of up to 20% salt are required to destroy most bacteria; etc.	Incorrect concentration of salt; etc.

- (c) Outline the protection provided to the consumer by current food legislation.  
Refer to **one** Regulation/Act in your answer. (12 marks)

**Name of Act: 4 marks** (graded 4:3:2:0), **2 points @ 4 marks** (graded 4:3:2:0)

**Food Hygiene Regulations:** ban the sale of food that is diseased, contaminated or unfit for human consumption; require precautions to be taken to prevent the contamination of food; require food premises to maintain hygienic conditions; require food handlers to maintain the highest standards of hygiene and adhere to HACCP system; require mobile food stalls to obtain a licence for their business; issue closure orders to food premises where there is an immediate threat to public health; etc.

**Food Information to Consumers (FIC) Regulation: labelling requirements** which must appear on packaged food - name of the food; list of ingredients in descending order of weight; declaration of allergens; quantity of certain ingredients; net quantity; date of minimum durability; special storage instructions; name and address of the food business; country of origin; instructions for use; alcohol strength; etc. **nutritional labelling requirements:** nutritional information per 100 g/100 ml; must relate to foodstuff as sold; must be presented together in one place, in a table with numbers aligned; must provide minimum mandatory information – energy, fat, saturates, carbohydrates, sugars, protein and salt; etc.

**European Communities (Hygiene of Foodstuffs) Regulations:** outline the general hygiene standards that food premises must follow; require all staff to be trained in food hygiene; require a food safety management system e.g. HACCP, to be in place and adhered to; where there is an immediate risk to public health, closure orders can be issued to food premises and unfit food destroyed; etc.

***Sale of Food and Drugs Acts:*** protects the consumer against fraud and adulteration of food; it is an offence to mix, colour or stain a food with an ingredient or material that makes it hazardous to human health; it is an offence to sell any food that is not of the nature and quality demanded by consumers; etc.

***Health Acts:*** prevent danger to public health arising from the importation, manufacture, distribution or sale of food; control compositional standards of foods that are of importance to consumers' health; etc.

***An Bord Bia Act 1994; Food Safety Authority of Ireland Act; etc.***

#### Question 4

Design and style are inherent factors in modern kitchen appliances.

- (a) Name and describe **one** household appliance with a motor suitable for use in a kitchen. Refer to:

- selection criteria **3 points @ 2 marks** (graded 2:1:0)
  - sourcing consumer information **3 points @ 2 marks** (graded 2:1:0)
  - working principle **4 points @ 2 marks** (graded 2:1:0)
  - guidelines for use. **2 points @ 2 marks** (graded 2:1:0)
- (26 marks)

**Name of household appliance** **2 marks** (graded 2:0)

*e.g. refrigerator, food processor, food mixer, juicer, hand held blender, liquidiser, smoothie maker, electric carving knife, extractor fan, can opener, soup maker, microwave oven, washing machine, tumble dryer, dishwasher etc.*

#### Selection criteria

*Cost; brand name; energy efficiency; safety; size; space available; design and construction; ease of cleaning; guarantee; etc.*

#### Sourcing consumer information

*Online reviews; sales people; consumer magazines; web sites; advertisements; newspaper /magazine articles; manufacturers leaflets/brochures; word of mouth; etc.*

#### Working principle

**Refrigerator:** *compressor contains gaseous refrigerant; motor attached to compressor forces gaseous refrigerant into the condenser; condenser cools the refrigerant and converts it to a liquid; liquid refrigerant passes into the evaporator where it changes to a gas drawing heat from inside the fridge; gaseous refrigerant returns to the compressor and the cycle begins again; thermostat disconnects the motor when the fridge temperature is between 1°C and 4°C; etc.*

**Food processor:** *blade/disc is placed on the spindle; food is placed in the bowl/feeder funnel, lid is locked in place; plugged into electric socket; motor powered by electricity causes the belt in the base to turn; the belt causes the spindle and attachments to rotate at high speed; foods can be chopped, liquidised, sliced, grated or whisked; foods/liquids can be added at the start or during operation through the feed tube; a pusher is used to push food through; safety lock system prevents the appliance from operating unless the lid is fully locked in position, it will turn off the motor if the lid is removed during use; etc.*

**N.B.** Accept well labelled diagram/s

#### Guidelines for use

**Food processor:** *never use with wet hands; choose appropriate attachment; assemble correctly; choose correct speed; etc.*

**Refrigerator:** *avoid opening door unnecessarily; cool hot food before placing in the fridge; cover food; store raw food below coked food; use food in rotation; do not over pack; etc.*

**N.B.** Accept points relevant to household appliances with a motor suitable for use in a kitchen.



- (b) Outline how the consumer can protect the environment when choosing, using and disposing of electrical appliances. (12 marks)

**3 points @ 4 marks** (graded 4:2:0)

**1 reference to choosing, 1 reference to using 1 reference to disposing**

**Choosing:** *high rating on energy efficient label; correct size for needs; etc.*

**Using:** *economy cycles; use full loads; low temperature washes; standby mode switched off; etc.*

**Disposing:** *recycling centres; care when disposing of fridges (refrigerant gas); WEEE directive requires producers to finance the collection, treatment, recovery and environmentally-sound disposal of waste electrical and electronic equipment; enables consumers to leave household electrical and electronic equipment back free of charge, either to retail outlets or to other authorised collection points; etc.*

- (c) Explain how the Sale of Goods and Supply of Services Act (1980) supports the consumer should the product prove faulty. (12 marks)

**3 points @ 4 marks** (graded 4:3:2:1:0)

*Legally binding contract between the buyer and seller when a product is purchased; goods must be fit for the purpose intended; goods must be of merchantable quality; reasonably durable; goods must be as described; goods must correspond to the displayed sample; act applies to guarantees and notices in shops; redress – refund, repair or replace; etc.*

### Question 5

A family is two or more people who share goals and values, have long term commitments to one another and usually reside in the same dwelling.

- (a) Give an account of the historical development of the family in Ireland from the middle of the twentieth century to the present day. (20 marks)

**5 points @ 4 marks** (graded 4:2:0)

**(2 references to middle of the century, 2 references to present day + 1 other)**

**Post industrialisation:** 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; family size decreased; etc.

**The modern family:** nuclear family; divorce; blended family; same sex marriage; family members travel abroad to seek work; communication on Facebook, Skype, Zoom etc.; 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; role overload; role conflict; state supports for families; etc.

- (b) Outline the roles and responsibilities of family members and explain how these roles evolve through the life cycle of the family. (18 marks)

**3 points @ 6 marks** (graded 6:4:2:0)

**(1 reference to each group)**

**Children's/teenager's roles and responsibilities:** responsibilities influenced by age; showing respect, learning to behave in a socially acceptable manner; acquiring knowledge formally and informally; achieving gradual independence; adolescents may have extra responsibilities helping with younger siblings; contributing to decision making and running of the home; etc.

**Parent's roles and responsibilities:** reproduction; nurturing; socialisation; economic; education; caring for each other; caring for the elderly; etc.

**Grandparent's roles and responsibilities:** grandparents play a prominent role in family life; spending time with their children/grandchildren; provide childcare; financial help; emotional support; passing on values; etc.

- (c) Discuss the importance of good communication within the family. (12 marks)

**3 points @ 4 marks** (graded 4:2:0)

Encourages good quality relationships; children feel valued; develop good listening skills; prevents stress; easier to solve disagreements; develops positive self-esteem; creates a positive and relaxed home environment; clarifies rules and expectations; helps to build trust among family members; etc.

**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)** Flexibility of space is critical to the success of today's homes.

**(i)** Evaluate the suitability of open plan living spaces in house design. (16 marks)

**4 points @ 4marks** (graded 4:2:0)

*Multifunctional; brings family together; easier to observe children; conducive to entertaining; traffic flow; spacious and visually appealing; increases value of property; shared light; layout flexibility; improved sociability and communication; etc.*

*High noise levels; spaces can appear untidy; lingering cooking smells; heat costs; lack privacy; etc.*

**(ii)** Discuss the factors that should be considered when planning the interior design of a home. (16 marks)

**4 factors @ 4 marks** (graded 4:2:0)

*Budget available; family requirements; special needs; traffic flow; aesthetics; comfort; ergonomics; environmental awareness; sustainability; colour scheme; fabrics; etc.*

**(iii)** Describe **three** principles of design and give an example of the application of each principle when designing an interior space. (18 marks)

**3 principles @ 6 marks** (graded 6:4:2:0)

*Balance; proportion; emphasis; rhythm;*

**Balance:** *when harmony is achieved between the elements of design (colours, patterns and textures); well-balanced room is aesthetically pleasing; symmetrical balance is achieved when one object is a mirror image of another in terms of size/shape, colour, pattern or texture; etc.*

**Proportion:** *relationship between objects and their size; achieved when the pieces of furniture in a room relate to one another in size and relate to the size of the room; etc.*

**Emphasis:** *the eye is drawn to a particular object/area/feature in a room; add interest/variety to a room giving it a focal point; achieved by using strong/contrasting colours, pattern, texture, shape or lighting; etc.*

**Rhythm:** *used to link various objects in a room to create a harmonious, unified look; colours /patterns/textures repeated to bring a space together; etc.*

**and**

- 1.(b) 'The average rent in Ireland is at an all-time high and the availability of houses to rent is at its lowest ever level.' (www.daft.ie 2019)

- (i) Discuss the comparative costs for a young couple of buying versus renting a house. (16 marks)

**4 factors @ 4 marks** (graded 4:2:0)

**Buying: initial costs** – 10% deposit on properties up to €220,000, over €220,000 20% deposit required on the excess; **fees** – lending agency fees to include application fee, property search fee, lender's survey cost, indemnity bond; legal fees; stamp duty; buyers survey fee; etc.

**Continuous costs** – property tax (LPT) monthly mortgage repayments; mortgage protection policy; house insurance; maintenance and repair costs; service charges; household bills; etc.

**Renting: initial costs** – deposit of one month to six weeks rent in advance; **fees** – lending agency fees if used to find a rental property; etc. **Continuous costs** – monthly rent payments; contents insurance; service charges; household bills; etc.

- (ii) Name and give details of **one** housing scheme offered by Local Authorities. (14 marks)

Name: **2 marks** (graded 2:1:0), **3 points @ 4 marks** (graded 4:2:0)

**Housing Assistance Payment (HAP):** available to those who have a long term housing need, approved for social housing support, enables people to obtain accommodation within the private rental sector; suitable accommodation in the private rental sector must be sourced by the person in receipt of the HAP, once approved the Local Authority pays the full agreed monthly rent to the landlord on behalf of the person; individuals in receipt of HAP pay a rent contribution to the Local Authority, based on their income and ability to pay; individuals in receipt of HAP are able to take up full time employment; etc.

**Mortgage Allowance Scheme:** available to social housing tenants to take out a mortgage to buy or build a private house; designed to ease the transition from rented social housing to paying a mortgage and to ensure that mortgage repayments can be met; an allowance of up to €11,450 is paid directly to the lending agency by the Department of the Environment, Community & Local Government over a five-year period on a reducing scale; etc.

**Rebuilding Ireland Home Loan (Home Choice Loan/ Local Authority Mortgage):** government based loan provided by local authorities, available to first-time buyers who are unable to obtain a loan from a commercial lending agency; loan offered can be up to 92% of the price of a new or second-hand property, or the price of building a new home up to €285,000; monthly repayments over 30 years; to qualify single applicants must earn over €35,000, or €45,000 as joint applicants, be in continuous employment for a minimum of one year, or submit certified accounts for the previous two years if self-employed; provide evidence they could not obtain sufficient finance from two banks or building societies; etc.

**Incremental Purchase Scheme:** provides an affordable route to homeownership for households in receipt of social housing support for a minimum of one year and earning at least €15,000 annually; applies to new-build social housing or approved houses only; depending on their income applicants receive a discount of 40-60% on the total price of the house; applicant must take out a mortgage with a lending agency to purchase the remaining balance and pay it to the local authority; must pay an incremental purchase charge to the local authority on the discounted amount over the next 20-30 years, which reduces annually by 2% until the charge is fully paid; etc.

or

1.(c) The heating system is integral to the overall design of a home.

- (i) Explain the factors that should be considered when choosing a heating system for a new house. (16 marks)

**4 points @ 4 marks** (graded 4:2:0)

*Cost - installation, running and maintenance; safety; environmental impact - renewable heating sources e.g. solar; non-renewable fossil fuels; sustainability; storage required; aesthetics; heating requirements; size of house; zoned heating; reliability; maintenance; etc.*

- (ii) Name and describe **one** type of home central heating system.  
In your answer refer to:

- fuel/energy source **1 mark** (graded 1:0)
  - working principle **3 points @ 3 marks** (graded 3:2:0)
  - impact on the environment. **1 point @ 3 marks** (graded 3:2:0)
- (14 marks)

**Name of heating system** **1 mark** (graded 1:0)

*Full central heating – wet, dry system; partial central heating; local heating; underfloor heating; solar heating; geothermal thermal; biomass; wind powered turbines; hydroelectric power; etc.*

**Fuel/energy source:** *oil; gas; solid fuel; solar; geothermal; etc.*

**Working principle**

**Wet central heating:** *boiler heats cold water by convection; heated water rises and draws the colder water underneath; creates convection currents, water reaches the required temperature; due to thermal expansion the hot water leaves the top of the boiler and travels to the hot water cylinder; passes through a heat exchanger, heats the water in the tank indirectly through convection; when the water in the heat exchanger cools, it returns to the boiler; hot water is sent from the boiler to radiators; radiators heat rooms by radiation and convection; etc.*

**Dry central heating:** *under floor/storage heating - electrical elements embedded in thermal blocks of fireclay or concrete, surrounded by an insulating material; elements are heated by electricity at off-peak periods, the thermal blocks heat up; fire clay blocks absorb heat through conduction and gradually release heat during the day; radiated heat; heat transferred by convection; boost heat option; etc.*

**Solar heating:** *solar collectors absorb sunlight, convert it into heat; mechanical devices such as pumps and fans transfer the solar heat directly to the interior space or to a storage system for later use; heat is transferred by convection around each room; etc.*

**Air source heat pump:** *extracts heat from the outside environment by using a fan in a wall mounted unit; the system contains a compressor, a condenser, an expansion valve and an evaporator; the fan passes air over the evaporator; refrigerant absorbs heat from the outside air; refrigerant boils and evaporates at a low temperature giving vapour; vapour passes into the*

*compressor and compression increases the temperature; the warm vapour is condensed in the heat exchanger, rejected heat is passed into the heating system and is distributed through radiators and underfloor heating; condensed vapour returns to liquid, passes back through expansion valve, reducing pressure and temperature, cycle starts again; etc.*

**Ground source heat pump:** *extracts heat from the ground through a refrigerant loop buried in the ground; etc.*

**NB.** *Accept well labelled diagram/s.*

**Impact on the environment:** *must relate to fuel used in chosen heating system; e.g. low use of fossil fuels; renewable/non-renewable; sustainable; 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)** Style is the way to say who you are without having to speak.

**(i)** Sketch and describe a daywear outfit suitable for a college student. (10 marks)

**Sketch: 4 marks** (graded 4:3:2:1:0)

**Description: 6 marks** (graded 6:4:2:0)

**(ii)** Evaluate the outfit with reference to each of the following:

- suitability for purpose
- sustainability
- current fashion trends.

(15 marks)

**3 points @ 5 marks** (graded 5:3:0)

**Suitability for purpose:** *comfort; practical; easy to care for; durable; etc.*

**Sustainability:** *eco-friendly fabrics e.g. organic cotton; hardwearing; long lasting; can be recycled; etc.*

**Current fashion trends:** *athleisure; active wear; denim; block colours; puff shoulders; etc.*

and

**2.(b)** Fabrics are given a variety of treatments to alter their performance.

**(i)** Identify **three** functional finishes applied to fabrics. (6 marks)

**3 finishes @ 2 marks** (graded 2:0)

*Anti-bacterial; anti-static; crease resistant; flame resistant/flame retardant; mercerised; moth-proof; pre-shrunk; stain-resistant; water-proof; water-repellent; etc.*

**(ii)** Explain how finishes enhance fabric performance. (9 marks)

**3 points @ 3 marks** (graded 3:2:0)

**Anti-bacterial:** *fabric will resist many types of bacteria, including those present in perspiration; etc.*

**anti-static:** *fabric does not gather static electricity, will not cling; etc.* **crease-resistant:** *fabric will resist and recover from creases; etc.* **flame resistant:** *fabric does not actively support a flame once its source has been removed; etc.* **mercerised:** *fabric has greater strength, lustre and affinity for dyes; etc.* **pre-shrunk:** *fabric will not shrink more than the percentage indicated (1-2 %); etc.* **stain resistant:** *fabrics resist water-based and/or oil-based stains; etc.* **waterproof:** *fabric is totally impervious to water under any conditions; etc.* **water-repellent:** *fabric resists absorption and penetration of water but remains porous; etc.*

or

**2.(c)** The clothing and textile industry in Ireland provides significant employment.

**(i)** Give a brief overview of the structure of the clothing and textile industry. (9 marks)

**3 points @ 3 marks** (graded 3:2:0)

*Small family-owned and managed businesses; large companies; some manufacturing out sourced; indigenous and non-indigenous firms; involves research, design, marketing, brand awareness; different sectors - ladies wear, menswear, sportswear, accessories, footwear; etc.*

**(ii)** Describe the importance of small businesses in this industry. (6 marks)

**2 points @ 3 marks** (graded 3:2:0)

*Provide opportunities for entrepreneurs to create jobs; greater job satisfaction than with larger companies; foster local economies; more adaptable and innovative; allows for production of artisan products; offers greater variety; etc.*



## Elective 3 – Social Studies – 80 marks

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

**3.(a)** Education opens the minds of students and prepares them to face the world.

**(i)** Explain how education is used as a method of socialisation for young children.

(15 marks)

**3 points @ 5 marks** (graded 5:3:0)

*Formal in the classroom; informal through the hidden curriculum; reinforces social skills taught at home; behaviour; cultural values; responsibility; punctuality; respect for authority; sharing and team work; etc.*

**(ii)** Discuss the role of education in contributing to the development of the individual.

Refer to:

- physical development
- emotional development
- moral development
- intellectual development.

(20 marks)

**4 points @ 5 marks** (graded 5:3:0)

**Physical development:** *provides opportunities for children in early education to play with toys which can develop hand-eye coordination and dexterity; provides practical subjects which can enhance coordination and motor skills; provides PE which develops balance and agility; etc.*

**Emotional development:** *helps children gain emotional independence from parents; provides opportunities to develop relationships outside the home; promotes emotional health and well-being by providing coping skills for life; mixed-sex schools enable them to be emotionally accustomed to relate to people of both genders; etc.*

**Moral development:** *have an ethos outlining their beliefs, values, customs and moral thinking; have rules, which teach students how to function well in society; examine moral dilemmas, instilling in students the difference between right and wrong; etc.*

**Intellectual development:** *provides access to educational resources e.g. computers; challenges and tests intellect by providing an array of subjects and extra-curricular activities; provides examinations and homework assignments that motivate students to achieve potential; etc.*

**(iii)** Give an account of the supports provided in second level schools for children with special educational needs.

(15 marks)

**5 points @ 3marks** (graded 3:2:0)

*Learning support/resource teachers; special needs assistants; visiting teacher services provide support for children with visual or hearing impairments; multisensory rooms; assistive technology e.g. laptops with zoom text software; reasonable accommodations in examinations; language support; special transport support; adapted furniture and equipment; improved accessibility; etc.*

and

**3.(b)** 'The number of people unemployed in Ireland was 126,900 in September 2019.'  
([www.irish-examiner.ie](http://www.irish-examiner.ie))

(i) Discuss the causes of unemployment. (9 marks)

**3 causes @ 3 marks** (graded 3:2:0)

*Geographical location; foreign/global competition; low incentive; economic recession; seasonal factors; automation/technological advances; demand for products and services; COVID-19; etc.*

(ii) Outline the effects of unemployment on society. (12 marks)

**3 effects @ 4 marks** (graded 4:2:0)

*Emigration; antisocial behaviour; increase in crime; unemployment cycle; increase in taxes; growth in black economy; etc.*

(iii) Name and give details of **one** statutory initiative that encourages foreign investment and creates employment. (9 marks)

**Name: 3 marks** (graded 3:2:1:0), **2 points @ 3 marks** (graded 3:2:0)

**IDA Ireland (Industrial Development Agency):** encourages foreign investment to set up in rural and urban areas by providing supports and services to potential foreign investors; provides information on key business sectors and locations within the country; grants; creating links between businesses and local industries, service providers and educational institutions; etc.

**Enterprise Ireland:** responsible for the development and growth of Irish enterprises at home and on the world markets; works in partnership with Irish entrepreneurs to establish or expand businesses through advice, mentoring and grants; etc.

**SOLAS; Local Enterprise Offices (LEO); etc.**

or

**3.(c)** Leisure and sports activities play an important role in communities.

(i) Describe how age and gender impact on a person's choice of leisure activities. (12 marks)

**4 points @ 3 marks** (graded 3:2:0)

**2 references to age, 2 references to gender**

**Age:** young people and retired people tend to have fewer commitments, more time to spend on leisure activities; disposable income can vary with age; children and teenagers tend to opt for physically active or technology-based activities; some activities can be regarded as dangerous for children e.g. scuba diving; etc.

**Gender:** stereotyping is not permitted in leisure activities; some leisure activities are still dominated by one gender; amount of time available can be determined by gender; etc.

(ii) Evaluate **two** leisure facilities available in the community.

Refer to:

- facilities offered **1 point @ 3 marks** (graded 3:2:0) X 2
- value for money **1 point @ 3 marks** (graded 3:2:0) X 2
- benefit to the community. **1 point @ 3 marks** (graded 3:2:0) X 2 (18 marks)

**N.B.** accept all leisure facilities i.e. leisure centres, sports clubs, golf, tennis, horse riding etc.

**Facilities offered:** *classes; tuition; professional advice; equipment; pitches for games; floodlighting; all weather pitches; changing facilities; canteen/bar; etc.*

**Value for money:** *initial costs; membership fees; special equipment/clothes; amount of use/access; family rates; special discounts; extra benefits e.g. free entry to tournaments; friends can participate at reduced rates; etc.*

**Benefit to the community:** *provides employment; creates community links as many local people might avail of the facility; sports facilities offer opportunities to develop teamwork skills; improves wellbeing; etc.*

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# HOME ECONOMICS – SCIENTIFIC AND SOCIAL

## FOOD STUDIES COURSEWORK

### MARKING SCHEME

Grading Table

Grade	Mark bands
1	288-320
2	256-287
3	224-255
4	192-223
5	160-191
6	128-159
7	96-127
8	< 95

*To calculate weighted mark, divide the raw mark awarded by 4.*

## Food Studies Practical Coursework General Marking Criteria

### Investigation: Analysis/Research

32 marks

#### Research and analysis

(24 marks)

#### **Band A 19 – 24 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 13 – 18 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 7 - 12 marks** (basic - 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 - 6 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:** menu for day/2 two course meals/1 dish/2 dishes/2 products.

(4 marks)

**If dish prepared is not investigated** - 1/- 2/- 4 marks in Investigation.

(menu: – starter/dessert = 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.

**Sources: 2 sources @ 2 marks** (graded 2:1:0)

(4 marks)

**Preparation and Planning****8 marks****Resources:**

- ingredients (2 marks), quantities (2 marks), costing (2 marks), equipment (2 marks)
- AOP E – product/s (2 marks), equipment (6 marks)

**Implementation****28 marks**

Outline of the procedure followed to include food preparation processes, cooking time, temperature, serving/presentation, tasting/evaluation. (16 marks)  
*(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 - 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** **2 points @ 4 marks** (graded 4:2:0) (8 marks)  
 (must relate to specific dish/test)  
*Identification (2 marks) and **clear explanation of importance** (2 marks) of **two factors** considered which were **critical to the success of the dish**.*

- **Safety/Hygiene** **2 points @ 2 marks** (graded 2:1:0) (4 marks)  
 (must relate to specific ingredients being used/dish being cooked)  
*Identification (1mark) and explanation (1 mark) of **one** key safety issue **and one** key hygiene issue considered when preparing and cooking dish/conducting test.*

**Evaluation****3 points @4 marks****12 marks**

Evaluate the assignment in terms of:

**Implementation**

**Band A - 4 marks** - identified and analysed specific strengths/challenges in carrying out the task, modifications, where suggested, were clearly justified, critical analysis of use of resources/planning.

**Band B - 3 marks** - identified strengths/challenges in carrying out task, some justification of proposed modifications, limited analysis of use of resources/planning.

**Band C - 2 marks** - some attempt made at identifying strengths/challenges in completion of task, modifications where suggested not justified, reference made to use of resources/planning.

The **Specific requirements** of the assignment

**Band A - 4 marks** - draws informed conclusions in relation to the key requirements of the assignment.

**Band B - 3 marks** - draws limited conclusions in relation to the key requirements of the assignment.

**Band C - 2 marks** - summarises outcomes in relation to the assignment.

## Area of Practice A: Application of Nutritional Principles

### Assignment 1

*Food and nutrition are central to the physical and cognitive development of children and young people, which in turn contributes to educational success.*

Research and elaborate on the nutritional needs and the meal planning guidelines that should be considered when planning school canteen meals for 12 - 18 year olds.

Bearing in mind these considerations, investigate a range of menus (two courses) suitable for the main meal of the day for school going teenagers.

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

2020

#### Key requirements of the assignment

- *dietary/nutritional needs when planning **school canteen meals for 12-18 year olds***
- *meal planning guidelines with specific reference to **school canteen meals for 12-18 year olds***
- *range of menus (two courses) suitable for the main meal of the day, to include chosen main course dish (identified in the menu).*

#### Investigation

**Dietary/nutritional requirements:** *nutritional balance; physical growth spurt creates the need for a greater intake of nutrients; daily requirements of macro/micro nutrients including protein/carbohydrate/fat/iron/calcium requirements as appropriate to 12-18 year olds, with reasons for possible variations; high fibre; Vitamin C/iron absorption; Vitamin D/calcium absorption; energy balance vis a vis activity levels; energy requirements peak when high growth rates and high activity levels coincide; current nutritional guidelines re nutrient and food intake; use of MyPlate icon; etc.*

**Meal planning guidelines:** *use of food pyramid to ensure balance; variety of foods; plan theme days to trial new healthy foods and expose students to new foods; personal likes and dislikes; use of foods in season; avoid snack foods, foods high in salt, saturated fat and sugar; choose healthy snacks; dishes suitable for freezing; dishes suitable for different diets; consider food allergies; resource issues; special offers; buy in bulk; disposable plates and cutlery add to expense, environmental issue; use of energy efficient cooking methods; foods that are easy to prepare in large quantities; serving sizes; easy to serve/portion food; convenient/easy to eat foods; foods easy to keep hot; attractively served foods; etc.*

**Dishes selected** - must meet the nutritional requirements for 12-18 year old's  
- must be a main course (*from menu*).

**Evaluation (a)** implementation and **(b)** the specific requirements of assignment

*Analysis of findings regarding the nutritional/dietary requirements when planning school canteen meals for 12 - 18 year olds.*

*Meal planning guidelines – range of foods/dishes suitable when planning school canteen meals for 12-18 year olds; etc., how the selected dish meets the requirements as identified in the investigation; etc.*



## Assignment 2

*Overweight and obesity are largely preventable, however, in the past two decades levels of overweight and obesity in Ireland have doubled. Now only 40% of us have a healthy weight.*

*(A Healthy Weight for Ireland, Obesity Policy and Action Plan 2016-2025)*

With reference to this statement, research and elaborate on **(i)** the causes of obesity and **(ii)** the possible health implications for adults who are overweight or obese.

Investigate and elaborate on the nutritional needs and the factors that should be considered when planning and preparing meals for adults who wish to reduce their weight.

Having regard to the factors identified in your research, suggest a menu (three meals) for one day for this group of people.

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.

2020

### Key requirements of the assignment

- *causes of obesity*
- *the possible health implications for adults who are **overweight or obese***
- *nutritional needs and dietary requirements with reference to **adults who wish to reduce their weight***
- *relevant meal planning guidelines with reference to **adults who wish to reduce their weight***
- *menu (three meals) to include the chosen main course dish (identified in research).*

### Investigation

**Causes of obesity:** *lack of exercise; inactive lifestyle; busy lifestyle; energy intake greater than energy expenditure; composition of the diet; poor appetite control; fast food diet high in fat and sugar; genetic factors; hormonal; psychological reasons; etc.*

**Health implications:** *coronary heart disease (CHD); high blood pressure; high cholesterol; stroke; diabetes; back pain; varicose veins; osteoarthritis; breathing difficulties; reduction in life expectancy; poor self-esteem; infertility and difficulties in childbirth; etc.*

**Dietary/nutritional requirements:** *nutritional balance; daily requirements of macro/micro-nutrients including protein/carbohydrate/fat/iron/calcium requirements as appropriate; high fibre; Vitamin C/iron absorption; Vitamin D/calcium absorption; current nutritional guidelines re nutrient and food intake; use of 'diet' products; etc.*

**Meal planning guidelines:** *use of food pyramid to ensure balance; establish pattern of eating three regular balanced meals each day; eat wide variety of fruit and vegetables; cut down/avoid processed, snack and empty kilo calorie foods; choose low fat/low calorie products; avoid refined carbohydrate foods; select foods with a low GI (glycemic index); choose poultry, white fish and lean meats; cut fat off meat; avoid foods that contain hidden fats, replace with fruit and vegetables; use healthy cooking methods; drink water and natural fruit juices instead of fizzy drinks; etc.*

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

- should meet the nutritional requirements as identified for adults who wish to reduce weight
- must be a main course (from menu)

**Evaluation (a)** implementation and **(b)** the specific requirements of assignment

*Analysis of findings regarding what you learned from the investigation regarding the management of a diet for adults who are overweight or obese, factors that should be considered when planning meals for adults in order to maintain a healthy weight and to ensure nutritional adequacy, how the selected dish meets the requirements as identified in the investigation; etc.*

## Area of Practice B: Food Preparation and Cooking Processes

### Assignment 3

*Roasting enhances flavour through caramelisation and maillard browning on the surface of the food.*

Carry out research on roasting as a method of cooking in relation to each of the following:.

- definition and underlying principle
- different foods/dishes that can be cooked using this method
- the advantages of roasting
- the key points that should be considered to ensure success when using this method of cooking.

Prepare, cook and serve a dish of your choice where roasting is used as a cooking process.

Evaluate the assignment in terms of **(a)** implementation and **(b)** roasting as a method of cooking.

2020

### Key requirements of the assignment

*Research on roasting as a method of cooking:*

- *definition and underlying principle*
- *different foods/dishes that can be cooked using this method*
- *the advantages of roasting*
- *the key points that should be considered to ensure success when using roasting as a method of cooking*
- *chosen dish (identified in research).*

**Investigation: Definition and underlying principle:** *by **radiant heat** in front of or over a glowing source of heat with food being rotated on a spit or rotisserie, or cooking in an oven in small amount of fat; different methods include spit, pot, quick/slow, cold oven, flash roasting etc.; food is cooked by **convection** in an oven, hot air rises and cold air falls; quick roasting at 230/220° C for 20 minutes; reduce to 190/180° C for remainder of time; slow roasting at 160/150° C for one and half or twice the usual time; cold oven roasting at 200°C where food cooks as the oven heats, the slow rise of temperature ensures tenderisation; food can be seared in a very hot oven 230°C-260°C for 20 minutes to 'sear' the outside causing a change in natural sugars which causes browning/maillard reaction; develops a characteristic roast flavour; food can be cooked on a mechanically rotating spit under a hot grill/in a hot oven/open fire, by convection and radiation; food can be pot roasted by cooking in hot fat in a tightly covered saucepan, using **conduction** and convection; food is basted during cooking to brown the surface and moisten the food, caramelisation occurs on the surface of meat; food can be roasted in an open or covered tin; resting allows meat to redistribute the juices from the centre outwards, drier outer parts regain tenderness; etc.*

**Foods/dishes that can be cooked using roasting:** *meats: beef - sirloin, rib/round roast, fillet etc.; pork - loin, leg etc.; lamb - loin, leg etc.; poultry - chicken, duck, turkey, goose etc.; game; etc. vegetables - potatoes, root vegetables, peppers, marrows, onions etc.; fish; etc.*

**Advantages of roasting:** *vitamins remain in the food; enhances flavour; use of energy and oven temperature can be controlled; meat juices can be used for gravies; tender and succulent meat; continual basting with meat juices gives distinctive flavour; skill and technique can be displayed when roasting on a spit; etc.*

**Key points that should be considered to ensure success:** *have meat at room temperature; heat fat; sear meat; baste frequently during cooking; allow meat to 'stand'; the thicker the joint of meat the lower the temperature it should be cooked at; roasting bags allow meat to colour and reduce cooking time; importance of weighing foods and timing; use best quality vegetables; good quality oil for flavour; correct oven temperature; rest all meats prior to serving; slice roasted meats against the grain; etc.*

**Dish/food selected** - dish where roasting is main cooking process (*identified in research*)

**Evaluation (a)** *implementation* and **(b)** *roasting as a method of cooking.*

*How the selected dish meets the requirements as identified in the investigation; etc.*

## Area of Practice D: Properties of a Food

### Assignment 4

*The functional properties of food are the physical and chemical changes that occur during its preparation and cooking.*

Explain protein denaturation with reference to the coagulation of food.

Investigate and elaborate on the application of coagulation in the making of a range of dishes explaining the principle involved.

Prepare, cook and serve one of the dishes that you have investigated.

Evaluate the assignment in terms of **(a)** implementation and **(b)** success in applying the property of coagulation in the making of the selected dish.

2020

#### Key requirements of the assignment

- *explain protein denaturation with reference to the coagulation of food*
- *the application of coagulation in the making of a range of dishes explaining the principle involved*
- *chosen dish (identified in research).*

#### Protein denaturation with reference to the coagulation of food:

*Denaturation is an irreversible change to the structure of protein by physical and chemical means e.g. heat, acids, enzymes, mechanical action/agitation; the unfolded protein chains bond with each other forming clumps; it involves a change in the tertiary/secondary structure; the result is the setting/hardening of the protein food which is known as coagulation; etc.*

#### The application of coagulation and principle involved:

*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 gelatin, tenderising meat; myoglobin in meat causes its colour to change from red to brown; milk protein casein shrinks, 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 causes milk to curdle; 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 to illustrate the application of coagulation

***Heat:** egg custard, sponge cake, quiche, crème caramel, omelette, beef stew; etc.*

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

***Mechanical action/agitation:** pavlova, soufflés, mousses, sponge cake; etc.*

***Dish selected** – must show application of coagulation (identified in research)*

***Evaluation** (as specified in assignment)*

***(a)** implementation **(b)** success in applying the property of coagulation in the making of the selected dish i.e. mechanical action/agitation, heat, acids, enzymes; etc.*

## Area of Practice E: Comparative Analysis including Sensory Analysis

### Assignment 5

*Luxury chocolate brands are a popular choice with Irish consumers.*

Carry out research on the range of luxury chocolates available (brands, cocoa content, flavours and price).

Choosing one brand of chocolate, purchase two chocolate bars with a different cocoa content in each.

Carry out a preference test using a hedonic rating scale to determine the preferred chocolate.

Present the results obtained from the test.

Evaluate the assignment in terms of **(a)** implementation and **(b)** the test results obtained. **2020**

### Key requirements of the assignment

- *research on the range of **luxury chocolates** (brands, cocoa content, flavours and price)*
- *a preference test using a hedonic rating scale*
- *conditions to be controlled during testing*
- **selected products** *(two chocolate bars the same brand, different cocoa content).*

### Investigation

(24 marks)

- Research/investigation of foods/products appropriate to the assignment *i.e. research the range of luxury chocolates available (brands, cocoa content, flavours and price).*
- **Preference test using a hedonic rating scale**  
**Description:** *tester is presented with one or more coded samples, indicating their degree of liking for each product/sample; etc.*  
**Aim of test:** *to determine how much a product is liked/disliked; etc.*  
**Possible outcomes:** *the products that are most and least preferred are identified; etc.*
- **Identification of the conditions to be controlled during the testing**  
*Conditions specific to the assignment e.g. containers used for testing; similar quantities of each sample; coding of samples; timing of test; where testing takes place; dietary considerations; etc.*
- **Selected dish/product** (4 marks)  
**Selected products:** *two chocolate bars each with a different cocoa content*

**Sources: 2 @ 2 marks** (graded 2:1:0)

(4 marks)

### Preparation and Planning

- **Resources** 2 marks (graded 2:1:0) (8 marks)
- **Testing equipment needed to carry out assignment** 6 marks (graded 6:5:4:3:2:1:0)

**Preference Test:** Based on 6 testers: 6 trays, 6 glasses of water, 12 coded containers, 6 samples of chocolate A, 6 samples of chocolate B, 6 score-cards, 1 record sheet, pens; etc.

## Implementation

(16 marks)

### 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 Test – Hedonic Rating Scale (two products)

**Based on 6 Testers:** Code 12 containers, 6 containers with symbol □, 6 containers with symbol ◇; arrange chocolate samples in each container; set up 6 trays numbered 1-6; place one container with symbol □, one container with symbol ◇, a scorecard, pen and water on each tray; instruct testers to follow instructions on score card, taste each sample, indicate how much the product is liked/disliked by placing a tick beside the appropriate descriptor; completed scorecards are collected and results transferred onto a record sheet; total score/average score for each product is worked out; codes are revealed and results presented – preferences identified; tidy; wash up; evaluate results; etc.

**To calculate the results:** to calculate the score for each product assign each descriptor a score value:

*like a lot = 5, like a little = 4, neither like nor dislike = 3, dislike a little = 2, dislike a lot = 1*

- **Key factors considered (any 2 @ 4 marks)** (graded 4:2:0) (8 marks)

*Key factors that may be considered in order to ensure success in this assignment include - containers used for testing; similar quantities of each sample; sufficient amounts; coding of samples; timing of test; where testing takes place; dietary considerations; glass of water/or dry cracker included to cleanse the palate; importance of silence during testing; etc.*

- **Safety and hygiene** (4 marks)

*Safety: 1 point @ 2 marks* (graded 2:1:0) *Hygiene: 1 point @ 2 marks* (graded 2:1:0)

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

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

### Evaluation (3 points @ 4 marks)

(12 marks)

#### Implementation

*Testing procedures used; key factors when conducting the test; safety and hygiene issues considered; problems encountered and suggested solutions; evaluate efficiency of work sequence; etc.*

#### Specific requirements of the assignment

*Evaluate the results obtained for the test and draw some conclusions.*

*The factors that may contribute to the test results obtained should be analysed.*

## 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 any **four** assignments for examination.
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, and 5 *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/-4) under meals/dishes/products in investigation.
6. Dish selected shows *few process skills* - mark pro-rata
7. Dish selected not fully compliant with requirements e.g.
  - an *uncooked dish* selected where a cooked dish specified
  - dish *not suitable for assignment requirements* – Assignment 1 and 2
  - the *investigated method not used in making the chosen dish* – Assignment 3 and 4
  - 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 dish; no marks to be awarded for the dish.

**N.B.** *Examiners must consult advising examiners when applying a scenario.*

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