



Coimisiún na Scrúduithe Stáit
State Examinations Commission

Leaving Certificate 2012

Marking Scheme

Home Economics – Scientific and Social

Higher Level



Coimisiún na Scrúduithe Stáit State Examinations Commission

Leaving Certificate Examination, 2012

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.

1. Give **one** main function of sodium in the diet. (6)

Maintains fluid balance in body tissue; healthy nerve activity; normal muscle contractions

List **two** good dietary sources of sodium.

(i) salt; processed food; cheese; snack foods (ii) smoked and cured meat and fish; meat products, etc.

2. Explain **each** of the following terms. (6)

(i) *Low-density lipoproteins (LDL)*

In the blood cholesterol is bound to certain proteins forming lipoproteins.

LDL harmful, thought to build up cholesterol in the arteries which causes damage to blood vessels and heart disease.

(ii) *High-density lipoproteins (HDL)*

Help to remove cholesterol from circulation and reduce risk of heart disease. Counteracts the hardening effect of cholesterol.

3. Explain the role of emulsifiers in food production. (6)

To hold two immiscible liquids together – an emulsifier has a hydrophilic head and a hydrophobic tail.

The hydrophilic head attaches itself to the water molecule and the hydrophobic tail attaches itself to the oil molecule thereby preventing the two substances from separating.

Examples – lecithin, GMS, alginates. Used in the manufacturing of mayonnaise, ice creams, etc.

4. What are *speciality foods* and give **two** examples of such foods. (6)

(i) *Speciality foods*

foods produced by small businesses or home enterprises; produced in small quantities; often sold at farmers markets; made using locally sourced ingredients; organic; little or any use of additives; foods manufactured specifically for special diets e.g. coeliac, vegan, diabetic, etc.

(ii) *Examples:* **chocolate; chutney; honey; preserves; cheese; yogurt; ice cream; home baking, etc.**

5. Complete the following table in relation to alternative (novel) protein foods. (6)

	Source	Product
Plant	Soya beans	TVP, tofu, soya oil, tempeh, soya products e.g. miso, milk, yogurt, , etc.
Micro-organisms	Bacteria, fungi, yeast, algae - Mycoprotein	Quorn products – burgers, mince, etc.

6. Name **three** methods of heat transfer and give **one** example of a method of cooking that illustrates the use of each. (6)

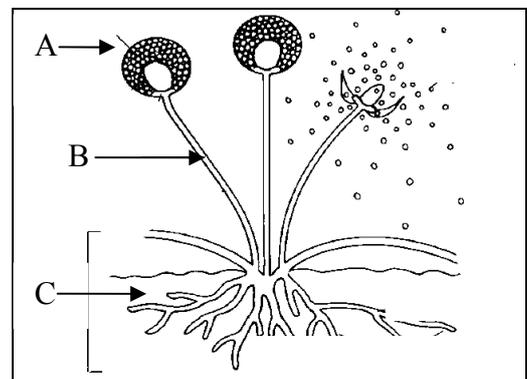
Method of Heat Transfer	Cooking Method
1. Conduction	Boiling, Grilling, Roasting, Baking, Frying, Microwave cooking
2. Convection	Boiling, Roasting, Baking, Steaming
3. Radiation	Grilling

7. Identify **three** major sectors of the Irish Food Industry. (6)

- (i) dairy
- (ii) beef, lamb, pig, poultry
- (iii) mariculture, edible horticulture, beverages, prepared consumer foods

8. In relation to moulds identify parts A, B and C as shown on the diagram. (6)

A. sporangium B. hypha /sporangiphore C. mycelium



9. Outline the protection provided to the consumer by the Consumer Information Act 1978. (6)
Give **two** points.
- (i) **protects consumers against false or misleading claims about goods or services (advertising)**
 - (ii) **forbids false or misleading information regarding price, previous price or recommended retail price**
10. Outline **two** benefits of private health insurance. (6)
- (i) **payment of consultants and GP fees; choice of private or semi-private hospital;**
 - (ii) **medical treatment abroad; tax relief; stays at convalescent homes; treatment in private out-patient clinics; allows for faster access to treatment; etc.**
11. In relation to consumer research, differentiate between each of the following **two** methods: (6)
- (i) *Desk Research*
involves the collection of data from sources such as state agencies, internet, etc; large quantity of information can be collected quickly; relatively inexpensive; information tends to be general and not very detailed (quantitative).
 - (ii) *Field Research*
information collected using techniques such as observing, interviews, surveys; information is detailed e.g. study consumer behaviour and attitudes (qualitative).
12. Explain energy labelling in relation to household appliances. (6)
- enables consumers to choose appliances based on their energy efficiency; rated on an A to G scale – A is the most efficient**
- Name **two** household appliances which carry an energy label.
- (i) **refrigerators, freezers**
 - (ii) **washing machines, tumble dryers, dish washers, ovens, 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. ‘Food-based dietary guidelines’ is the complete scientific term for a set of healthy eating messages provided for a population, in terms of how much and which types of foods to eat for good health.**
(Food Safety Authority of Ireland FSAI)

New recommendations for food-based guidelines for healthy eating in Ireland were devised by the FSAI. An extract relating to the recommended servings per day for two food groups (bread/cereals and fruit & vegetables) is presented in the table below.

Age		5-13 years		14-18 years		19-50 years		51+ years	
		Male	Female	Male	Female	Male	Female	Male	Female
Bread Cereals, etc. Servings	Moderately active	3-5	3-4	5-7	4	5-7	4-5	4-5	3-4
	Sedentary	3-5	3-4	4-5	3	4-6	3-4	4	3
Fruit & Vegetables Servings		5	5	5-6	5	5-7	5-6	5	5

- (a)** In relation to the **two** food groups referred to in the table, comment and suggest reasons for the variations in the recommendations made. **(24)**

4 points @ 6 marks each

2 references to each of the two food groups

Allow 2 marks for simple analysis of table

4 marks for elaboration i.e. possible reasons for the variations in the recommendations e.g. gender / age / activity; information on significance of food group in the diet

Possible reasons:

Gender – women have different calorie and nutrient needs compared with men - males have a higher daily energy requirement (kcal) than females, etc.

Age group – growing children have very different calorie and nutrient needs to adults - young children have lower energy requirements than adults; as people get older physical activity decreases and therefore energy requirements; teenagers and adult males little difference in energy requirements due to rapid growth in teenager years, etc.

Children and older people – same number of servings recommended for fruit and vegetables but young adults and adults slightly more, this could be due to appetite/ older people metabolism slows down, etc.

Activity – active people have greater calorie and nutrient needs compared with inactive people - sedentary workers have a lower daily energy requirement than active workers, etc.

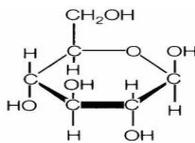
Metabolism – males generally have greater muscle mass and a lower body fat % than females therefore they have a higher BMR; metabolism slows down with age thus older people need to make adjustments to their diet, etc.

Difference between the 2 food groups – bread cereals are high energy carbohydrate foods so care needed to balance energy intake with energy output, fruit and vegetable group are high fibre foods and do not affect calorific intake, etc.

- (b) Give an account of carbohydrates and refer to:
- the chemical structure of a monosaccharide
 - the formation of disaccharides
 - the hydrolysis of sugar to include inversion.

Monosaccharide - 1 point @ 8 marks

(8)

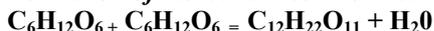


Chemical structure – glucose $C_6H_{12}O_6$

Disaccharide – 4 points @ 2 marks

(8)

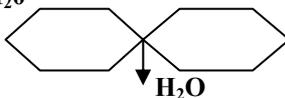
Formation of disaccharides – formed when 2 monosaccharides join together with the elimination of water;



(glucose + glucose = maltose)

(glucose + fructose = sucrose)

(glucose + galactose = lactose)



Hydrolysis & Inversion – 4 points @ 2 marks

(8)

Hydrolysis & inversion – disaccharide sugars react with water and enzymes and break down in to their respective monosaccharide units; this happens during digestion;

inversion is caused by heating with an acid or by the addition of an enzyme; sucrose breaks down into glucose and fructose this is known as an invert sugar; invert sugar is used when making boiled sweets and jam, etc.

- (c) Discuss the importance of balancing energy intake and energy output.

(12)

3 points @ 4 marks each

Energy intake should match energy output to maintain a healthy body weight; if kcal intake is greater than energy output, this can lead to weight gain; obesity and other health complications may result.

If kcal output is greater than energy intake, this leads to weight loss this may also have an on going adverse effect on the body.

- (d) Identify and discuss contemporary trends in food shopping practices.

(20)

5 points @ 4 marks each

Late night / 24 hour shopping; specialist shops – ethnic, gourmet foods; shopping in a number of different shops Tesco, Dunnes, Aldi; purchase of organic and free trade goods; choice of cheaper/value/discount brands; on-line shopping; home delivery; one stop shopping – shopping centres – shops, restaurant, crèches; environmentally friendly - choosing products with minimum packaging; less cash transactions – debit and credit cards popular; ready to go foods – vegetable stir fry, fresh fruit salad; purchase of locally produced produce; speciality foods have become popular; purchase of functional foods has become popular; shopping for dietary specific foods such as coeliac or vegetarian; consumer shopping practices are influenced by retail marketing strategies e.g. product placement, aroma of freshly baked bread, etc.

2. 'Almost six in ten people are aware of the "five or more a day message" but on average Irish people claim to be eating only three portions of fruit and vegetables a day.'

(Bord Bia)

- (a) Discuss the options available to consumers when selecting and purchasing fruit and vegetables. (12)

4 points @ 3 marks each

Wide range of fruit and vegetables available – exotic fruit etc; organic fruit and vegetables; free trade fruit and vegetables; pre-packed or loose; ready prepared / ready to go - vegetable stir fry, fruit salad; available out of season – irradiated; good value, special offers 3 for 2, 3 for €3; fruit and vegetables can be bought fresh, frozen or processed, etc.

- (b) Give details of the nutritional significance **and** the contribution to the diet of either fruit or vegetables.

5 points @ 4 marks each

(20)

Protein – LBV (roots, greens, fruit); pulses a better source of protein; soya beans HBV

Fruit has no protein

Fat – none except olives and soya beans (polyunsaturated fat)

Fruit has no fat except for avocados

Carbohydrate – vegetables very good source of fibre especially pulse vegetables; potatoes, root vegetables and pulses high in starch; carrots and onions have small amounts of sugar

Fruit contains sugar, starch, cellulose and pectin; sugar is present in all fruit in the forms of glucose, fructose and sucrose; Starch is present in under ripe fruit such as bananas; fibre is present in the cell wall of fruit

Vitamins – high in beta carotene (pro-vitamin A), some B group and vitamin C; dark green vegetables and yellow/orange or red vegetables best sources of beta carotene

Vitamin C – leafy greens, tomatoes and peppers; potatoes an important source of Vitamin C in the Irish diet; Vitamin B₁, B₂ and B₆ found in pulse vegetables; vitamin B₂ and niacin in mushrooms; folate in leafy green vegetables

Fruit is a valuable source of vitamin C e.g. blackcurrants and kiwi; yellow, orange and red coloured fruit are good sources of pro-vitamin A

Minerals – small quantities of calcium and iron present; root vegetables / leafy greens good source of calcium; iron in dark green vegetables; traces of potassium; zinc and iodine present

Small amounts of calcium and iron present in fruit; bananas contain potassium

Contribution to diet –HBV Protein for the growth & repair of body cells in adult children or teenage diets; useful in low calorie diets; low cholesterol diets; high fibre diets; wide variety available; economical, versatile – snack food; little loss of nutrients in frozen version; tinned fruit high in sugar unsuited to diabetic diet; antioxidant properties so beneficial in helping to prevent disease, etc.

- (c) Give an account of Vitamin A under **each** of the following headings: (18)

- *biological functions (3 points @ 2 marks each)*
e.g. to produce rhodopsin which prevents night blindness; maintain healthy membranes in the eye nose and mouth; healthy skin and hair; regulate growth; helps to prevent coronary heart disease; necessary for metabolism, etc.
- *effects of deficiency (3 points @ 2 marks each)*
e.g. night blindness; xerophthalmia an eye infection; reduced resistance to infection; dry skin; retarded growth, etc.
- *properties (3 points @ 2 marks each)*
e.g. fat soluble, insoluble in water, soluble in organic solvents; heat stable; can be destroyed by prolonged high temperatures; can be destroyed by oxygen; it is an anti-oxidant, etc.

3. 'Food safety is a right not a privilege.' (*Safefood 2007*)

(a) To ensure that food is safe to eat, discuss the importance of each of the following:

- food storage
- cooking and reheating procedures
- kitchen hygiene.

(24)

*6 points @ 4 marks each
2 points under each heading*

Storage – check fridge / freezer temperature; store perishable food below 5°C; store frozen food -18°C; check mould on vegetables; remove plastic from fruit and vegetables; raw and cooked foods should be kept apart; check best before and use by dates; cool foods before refrigerating / freezing; storage areas should be kept clean and well ventilated, etc.

Cooking & reheating – defrost frozen foods completely (in the fridge); cook large joints of meat and poultry thoroughly; use correct time and temperature when cooking; serve foods immediately; keep food hot at temp above 65 °C, consume hot food within 1.5 hours; reheat quickly above 100°C; reheat once only; keep food covered or in sealed containers before reheating; adhere to correct reheating times in the microwave, etc.

Kitchen hygiene – floor, walls and work surfaces should be easy to clean; good lighting system; effective ventilation to reduce condensation and growth of micro-organisms; clean water system to maintain hygiene; no access points for pets; good kitchen hygiene should be in place and adhered to e.g. HACCP, etc.

(b) Name one method of home preservation that involves the application of heat and explain the principle involved. (16)

Name method of preservation = 4 marks Principle involved 3 points @ 4 marks each

Methods – *Jam/chutney making, bottling, drying*

Jam/chutney making

Heat – very high heat is used to soften the fruit and to kill microbes and enzymes.

Sugar – a high proportion of sugar is used to help setting and also acts as a preservative. The sugar dissolves in the water of the fruit forming a concentrated solution. Water is then drawn from any microbial cells by osmosis to equalise the solution. This dehydrates the microbial cells causing death.

Fruit – good quality, ripe fruit will have a high pectin content which will help setting.

Acid – necessary to draw pectin out of the fruit, gives better colour and flavour and helps to prevent crystallisation. Lemons can be added if the fruit does not have a high acid content.

Pectin – ripe fruit has pectin if fruit is under or over ripe no pectin. Some fruits have more pectin than others so fruits are often combined to get a good overall pectin content.

Sealing – prevents the re-entry of micro-organisms.

Sterilising – to kill bacteria present.

PH – the vinegar in chutney lowers the PH which prevents microbial growth

Bottling – a process of preservation by sterilisation, usually fruit. Bottling kills yeast and moulds already present in or on the fruit by heating the jars of fruit in a water bath in the oven, on the hob or in a pressure cooker and then sealing the jars when hot. This forms a vacuum on cooling that creates a seal and prevents the re-entry of un-sterilised air.

Drying – herbs can be dried by tying them in bundles and allowing them to dry out in a hot press for a few days. As both micro-organisms and enzymes require moisture they are inactivated without it and the herbs are preserved.

(c) Outline the role of the Department of Agriculture, Food and the Marine in food safety. (10)

2 points @ 5 marks each

Ensures the highest possible standards of food safety and consumer protection in Ireland by: monitoring food safety in meat and meat products, milk and milk products, eggs and egg products and the use of pesticides; enforces EU legislation controlling the import of animal based foods from countries outside the EU; has responsible for registration and traceability of cattle, pigs and sheep; ensures correct hygiene procedures are implemented from the dairy farm to the dairy to the retailer and finally the consumer, etc.

4. 'Buying a home is one of the most significant financial decisions you will make in your lifetime.'

(www.myhome.ie)

(a) Discuss the factors which influence individual and family housing choices.

Refer to **each** of the following:

- economic factors
- national housing policy
- trends in housing developments.

(24)

6 points @ 4 marks each

2 points under each heading

Economic factors – cost; money available; parental assistance in house purchase; location; interest rates, etc.

Housing policy – high density living; sustainable communities supported by shops, schools, proper infrastructure etc.; retention of listed buildings through grants; protection of natural environment; provision of social and affordable housing; promotion of energy efficient homes; encouragement of home ownership through mortgage interest relief; improvements grants schemes e.g. insulation grants for solar panels; provision of rent allowance; registration of rented accommodation with the PRTB, etc.

Trends – development of larger housing estates; mixed developments in town centres including apartments, town houses and larger houses; increase in apartments especially in urban areas; big houses built in small estates; one-off houses on privately owned sites; larger houses in suburbs and home owner commutes to work; redevelopment of inner city areas; restoration of old/period properties; energy efficient houses; environmentally friendly methods of construction, etc.

(b) Name and describe **one** type of mortgage available to potential house buyers.

(14)

Name 4 marks; Description 2 points @ 5 marks each

Annuity, Endowment, Pension linked, Interest only, Tracker, Current Account etc

Annuity – each repayment goes partly to pay off the interest on the loan and partly to repay the principal amount borrowed; amount owed declines over the years; must take out a mortgage protection policy; popular interest rates may be variable or fixed or combination; variable rate fluctuates in line with interest rates from the ECB – element of risk involved as interest rates may increase; fixed rate is fixed for a set number of years, generally higher than a variable interest rate and outgoings are always the same; combination – loan is divided between variable and fixed, etc.

Endowment – combination of borrowing and investing; interest is paid on the loan and in addition a premium is paid on a life assurance policy; life assurance policy is designed to pay off/cover the loan when it matures; chance that the yield from the policy may not fully cover the loan; no extra mortgage protection policy needed (part of life assurance policy), etc.

Pension linked – pays interest on the loan and pays a sum into a pension scheme; loan is repaid from the pension fund on retirement; mortgage protection policy is necessary; popular with self-employed people because of better tax relief, etc.

Interest only – traditionally these mortgages were only available in respect of investment property purchases; interest only is paid to the lender with the capital balance staying constant; a number of conditions attached e.g. interest only facilities up to a maximum of three years with the underlying thinking being that it gives first time buyers a chance to get on their feet; a review of the interest only facility is imposed about every five years, etc.

Tracker – no longer available for new mortgages as Irish lenders were forced to withdraw these products following the credit squeeze; the product was priced by way of a margin over the ECB base rate, etc.

Current account – by combining a persons current account with their mortgage account all the money that is lodged in to the current account will be taken off the mortgage with the result that the mortgage is paid off earlier than planned by simply reducing the capital amount; this is a variable rate product and does not facilitate a fixed rate, etc.

- (c) Name and give details of one Local Authority scheme available to people in need of housing. (12)

Name of scheme - 3 marks
Details - 3 points @ 3 marks each

Tenant purchase scheme; shared ownership scheme; mortgage allowance scheme; affordable housing scheme

Tenant purchase scheme – Local Authority tenants for at least one year can opt to buy the house; house may be bought outright or through shared ownership scheme; house is priced at market value minus discounts; discount for each year of tenancy up to a max. of ten years.

Mortgage allowance scheme – can return existing home to Local Authority in order to buy or build a private home and may qualify for a mortgage allowance; allowance (up to €11,450) is paid on a reducing scale over 5 years and is paid directly to the mortgage lender; designed to make the transition from rent to home ownership easier.

Shared ownership scheme – must be in need of housing and satisfy an income test to be eligible; ownership is shared between the shared owner and the Local Authority; applicant must purchase at least 40% the value of the house and rent the remainder from the Local Authority; to pay a mortgage loan can be applied for from the Local Authority; outgoings consist of mortgage payments and a rent calculated at 4.4% of the cost of the rented share; outgoings are lower than for a standard mortgage; option of buying the remaining share when the initial share is fully purchased, etc.

Affordable housing scheme – LA provides new houses on land that it owns; houses are supplied at discounted prices to eligible purchasers (in need of housing and satisfy an income eligibility test); houses are purchased outright through a mortgage provided by the LA; loans of up to 97% of the price of the house are paid over 25 years; generally loan repayments should not exceed 35% of net household income, etc.

Rental Accommodation Scheme (RAS 2004) – available to those in receipt of rent supplement for 18 months or more; LA enters into medium or long term leases with landlords to provide good standard accommodation for households with a long term housing requirement; main benefit is the elimination of poverty traps as it allows tenants to take up employment, training or education opportunities and continue with RAS; their contribution to rent will increase in line with increased income.

Tenant Purchase of Apartments Scheme (TPAS 2012) – applicants eligible for Local Authority housing may apply to purchase an apartment; incremental purchase system applies with discounts of 40%, 50% or 60% depending on household income; apartment complexes (with at least 5 apartments) must be assessed to be deemed eligible for consideration.

5. 'Today more than ever before, young people are recognised as having rights.'
(Unicef)

- (a) Outline four rights of children within the family. (12)

4 points @ 3 marks each

Right to life; name and be granted a nationality; live with parents unless against their best interests; basic physical needs; to develop physically, mentally, socially, morally and spiritually; access medical care; protection from abuse and neglect; education, leisure, recreation and cultural activities; special care, education and training for those with a disability, etc.

- (b) Discuss each of the following:

- the difficulties that the family unit may experience when a child has special needs and
- the difficulties that the family unit may experience when a parent has special needs.

(3 points @ 4 marks) x 2 (12)

(12)

Child – shortage of available help; fewer educational opportunities; lack of adequate state financial support; reduced income if one parent stays at home to look after child; inadequate medical facilities; inadequate state facilities which puts the onus on the family to provide these.

Parent – social isolation; prejudice; lack of mobility and difficulty in accessing public transport and facilities; fewer employment opportunities; cost of modifying home to make it suitable; lack of independence; constant emotional support needed; difficulty in accessing available social assistance and grants; lack of support financial strain on those caring for the parent, etc.

(some points may be common to both child and parent)

- (c) Write an informative note on the Childcare Act, 1991.

2 points @ 7 marks each (14)

Makes provision for the care and protection of children by the following:

Intervention - health boards have the power to intervene in family situations where a child is deemed to be at risk e.g. assaulted, neglected or sexually abused.

Care order – health board may apply to the courts for a care order to facilitate the removal of a child from the family home to be placed in care for long or short term.

Supervision order – health boards may apply for a supervision order so that health board personnel can visit a child in their home periodically to monitor their health and welfare.

Section C

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) ‘If each of us becomes aware of our own power when it comes to energy efficiency and use it properly, we can collectively make a big difference to ourselves, our pockets and to the environment.’ *(Sustainable Energy Authority of Ireland)*

- (i) Discuss **four** factors that should be considered when choosing a heating system for a new house. (16)

4 points @ 4 marks each

Cost (installation and running); safety; space heating requirements; convenience; aesthetic appeal; environmental factors; water heating included; storage required; the size of the house, etc.

- (ii) Describe **one** type of central heating system suitable for a family home and include reference to:
- fuel/energy source
 - working principle to include methods of heat transfer
 - impact on the environment. (24)

Naming system – 4 marks

fuel/energy source - 4 marks

working principle - 3 points @ 4 marks each

impact on the environment -1 point @ 4 marks

Fuel / energy source - oil, gas, solid fuel, solar etc

Working Principle

Wet system/small bore system/indirect system – water heated in a boiler by convection; water expands, rises and pumped to all radiators in the house; individual radiators heat the rooms by radiation and convection.

Dry system/under floor heating/storage heating – electric elements embedded in thermal blocks of fireclay or concrete and surrounded by an insulating material. These elements are switched on at off-peak periods at night and the blocks heat up. The radiators or floor gradually release heat during the day. Many systems have an afternoon boost heat option. Some heat is radiated, but most is transferred by convection.

Solar heating – solar collectors absorb sunlight and convert it into heat. The system uses mechanical devices such as pumps and fans to move heat from collectors to storage and then to use. The heat is transferred by convection around each room.

Impact on the environment - low use of fossil fuels; fumes from oil heating, etc.

- (iii) Explain, giving examples, how levels of thermal comfort in the home can be controlled. (10)

2 points @ 5 marks each

Rooms in the home used for different activities require varying levels of thermal comfort which can be regulated by the use of a thermostat.

Recommended temperature varies for each room depending on its function e.g. sitting room 19°C to 23°C, living room 17°C to 21°C, bedroom 10°C to 16°C, minimum temperature of 20°C recommended for elderly people.

Room thermostat – the room thermostat detects the surrounding temperature of the room and maintains the temperature that it is set at.

Thermostatic radiator valve – This is fitted to the individual radiator. It opens and closes a valve to either allow or prevent the flow of water into the radiator.

Zoned Heating - this allows for heating various sections of the house.

and

- 1.(b) (i) Discuss the importance of adequate ventilation in a house. (15)

3 points @ 5 marks each

Provides *fresh air* for respiration; removes *stale air* full of impurities and odours; assists combustion e.g. open fires; controls *humidity* levels in the air; reduces condensation; controls air temperature; helps in the control of respiratory conditions such as asthma, etc.

- (ii) Recommend one method of artificial ventilation suitable for a kitchen and describe the working principle of the method recommended. (15)

Name method = 3 marks Working principle: 3 points @ 4 marks each

Extractor fans – positioned high up on an outside wall; when the fan is turned on the shutters open and the electric motor rotates the blades. The high speed of rotation creates suction drawing stale air out of the room. This is naturally replaced by fresh air.

Cooker hoods – canopy shaped extractor fan fitted over the cooker hob, may be ducted to the outside or may be ductless

Working Principle Ducted – fitted to an outside wall to ensure the shortest and most direct route to the outside; when turned on an electric motor rotates a fan, the high speed fan creates suction and draws in the stale air. The filters remove odours and grease purifying the air. The air is expelled to the outside. A hole cut in the external wall allows the stale air to exit.

Working Principle Ductless – used where there is no access to the outside (no duct) – air is recirculated back into the kitchen after it has been filtered via a carbon exhaust filter to prevent toxic fumes.

or

- 1.(c) Interior design involves determining the structure of a space, the needs of the occupants and the style that best suits both.

- (i) State, giving examples, how each of the following may impact on the interior design of the home:

- function of the room
- cost
- environmental awareness.

(18)

6 points @ 3 marks each

One reference to each heading+ 3 other points

Function – design of a room should allow for ease of movement, accommodate the natural traffic flow; room design should facilitate maximum efficiency e.g. work triangle; lighting and ventilation must be at a comfortable level to suit the use of the room e.g. kitchen different to sitting room; all heights e.g. work surfaces must be at a suitable level to avoid discomfort; spaces should be easy to clean and have free access to windows and sockets, etc.

Cost – people confined by budget constraints, have to choose within ones budget so choice may be restricted; good interior design does not have to cost a lot of money – taste; many outlets sell reasonably good quality and attractive pieces of furniture that are not expensive, etc.

Environmental awareness – use of natural materials e.g. wooden floors, stone fireplaces; features e.g. wood burning stove – environmentally friendly; tiling is energy efficient as it absorbs solar energy and releases heat gradually; organic paints are more environmentally friendly as there is less waste produced during their manufacture, etc.

- (ii) Explain **two** elements of design and give an example of the application of **each** in interior design.

(12)

Explanation – 2 points @ 3marks

Application – 2 points @ 3 marks

Elements – colour, pattern, texture

Colour – a design device that impacts greatly on how a room looks and feels....; primary, secondary, tertiary colours; warm, cool, pastel and neutral colours; colour schemes can be contrasting / complementary, monochromatic use of an accent colour; harmonious colour scheme; shade, tint, tone, etc.

Application – colour can be used to link rooms in a house; alter the proportions of a room; highlight good features, create atmosphere; aspect of the room may influence the choice of colour, etc.

Pattern – decorative designs which add variety and contrast to a room; over use can make a room fussy, under use room can appear bland, etc.

Application – add interest to a room e.g. using several patterns that are linked by colour, texture or motif in common; large scale and small scale patterns; bold patterns, etc.

Texture - refers to the feel or touch of an object or surface eg. smooth/rough, cold/warm

Application – contrasting textures add interest; smooth textures e.g. glass, mirror are cold and hygienic and suited to bathrooms and kitchens; rough surfaces such as carpet and upholstery are warm and comfortable adding atmosphere to a sitting room; matt surfaces such as emulsion paint absorb light and make colours appear darker, 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) ‘The economic climate and a fresh approach to fashion, has succeeded in turning many more fashion hounds towards the vintage fashion rails.’**

(www.stylebible.ie)

- (i) Assess the effects of socio-economic influences on the clothing industry. (15)

5 points @ 3 marks each

Social – social conformity; status of women; changing roles for men/women; the media; famous people; world events e.g the Olympics; award events, etc.

Economic – reduced consumer spending, down turn in the economy, more sombre / simple fashions, production costs; use of low cost materials; CAD design; development of new fibres and blends with endless qualities for use in garments, etc.

- (ii) You have been invited to attend a friend’s 18th birthday party with a 1980’s theme. Sketch and describe the outfit you would wear to the party. (10)

Large jewellery, slouch knitted dresses, lots of colour, puffed sleeves, etc.

Sketch – 6 marks

Description 4 marks (2 points @ 2 marks each)

and

- 2.(b) (i) Discuss why blended fabrics are popular in modern clothing. (6)**

2 points @ 3 marks each

Improve fabric performance; make some fabrics more affordable; produce better quality (different grades of wool blended together); improve overall characteristics – crease resistance; wearing performance; moisture absorbency; improve durability; enhance dye-ability; reduce static, etc.

- (ii) Set out the results of a study you have undertaken on **one** blended fabric. Refer to:

- **name - 3 marks**
 - **properties – 3 x 1 mark**
 - **uses – 3 x 1 mark**
- (9)

Name – polyester cotton (polycotton)

Properties – Positive - good wash wear; easy to press; strong; permeable to air; drip dries quickly; resists staining; comfortable; low static level due to cotton; good for dyeing;

Negative - mildew and rotting, static and pills (polyester); uncomfortable (low moisture absorption); damaged by hot concentrated alkalis, etc.

Uses – shirts, suits and skirts, etc.

or

- 2.(c) Fabric construction methods influence the appearance, proper and performance of the fabric.**

In relation to textile manufacture, name and describe **each** of the following:

- **one** fabric construction technique
 - **one** method of colour application
 - **one** method of design application.
- (15)

3 @ 5 marks each (name+description)

Fabric construction – knitting, weaving, bonding

Colour application – dyeing- disperse, acid dyeing, tie dying

Design application – screen printing, roller printing, stencil printing, transfer printing, embossing, 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 high level of joblessness and the continuing threat of unemployment are among the biggest issues adversely affecting the Irish economy. Figures released by the Central Statistics Office show that the standardised jobless rate increased to 14.4% in October 2011. Among those signing on were 93,013 Jobseeker's Benefit claimants and 301,333 Jobseeker's Allowance claimants.

	2006	2007	2008	2009	2010	2011
<i>Unemployment rates in Ireland</i>	4.4%	4.5%	6.4%	11.8%	13.6%	14.2%

(Seasonally adjusted standardised unemployment rates. Central Statistics Office)

- (i) Having regard to the information provided above, discuss unemployment in Ireland. (20)
4 points @ 5 marks each
One point to refer to the chart

Extent, reasons/causes, effects, etc.

Extent – gradual growth in unemployment figures leading to significant increase between 2008 and 2009 and steady rise upwards; employment levels reflect the state of the economy, recent economic downturn has seen a very significant increase in unemployment figures; construction industry worst affected, retail and service industries also affected; increase in emigration; service industry cutbacks due to on-going recession; rate of unemployment increased by more than 200% between 2006 and 2011; gradual increase between 2006/2008 with the biggest increase (50%) between 2008 and 2009; more than 300,000 are claiming jobseeker's allowance thus are unemployed for more than 1 year, etc.

Causes – global recession / down turn in the economy; developing technology; decline in primary and secondary industries; increased educational requirements; manufacturing companies relocating to Eastern Europe – high wage/salary levels leading to a lack of competitiveness; lack of demand for products and services; unemployment black spots; residual unemployment; geographical factors; seasonal factors, etc.

Effects on the Individual – loss of income; stress related to financial insecurity and fear of poverty; loss of status, self esteem; feelings of inadequacy leading to ill health and depression; substance abuse; sense of guilt; social isolation; suicide, etc.

Effects on the Family – drop in income leading to drop in living standards; poverty; mortgage arrears - repossession of homes; children may have to drop activities they were involved in; strain on relationships; lack of financial security, etc.

Effects on Society – emigration; cost to the state – higher taxes; lack of role models and positive work ethic; antisocial behaviour, etc.

- (ii) Analyse how each of the following has impacted on current rates of unemployment
- geographical location
 - the global economy
 - the level of demand for products and services. (20)

4 points @ 5 marks each
One reference to each heading + one other point

Geographical location – variations in employment in different regions e.g. highest in border region and south east, lowest in the mid-east and west; areas where there is high unemployment can lead to further unemployment as people leave the area to find work elsewhere and consequently shops and services Close, etc.

Global economy – downturn in the global economy causes unemployment rates in Ireland to rise; multi-national companies move their business to countries where production costs are lower etc.

Demand for products / services – cheaper imported goods has led to a fall in demand for Irish products; unemployed people spending less so demand for services has decreased; people have cut back on spending because they have had cuts to their income so spending power is reduced; Irish tourism affected by availability of reasonably priced foreign holidays; shopping on-line has offered cheaper option to purchasing products locally, etc.

(iii) Name and give details of one statutory response to creating employment. (10)

Name = 5 marks Details = 5 marks

Enterprise Ireland state agency that assists companies to increase their sales and exports thus creating more employment

County Enterprise Board offers support, training, advice, financial assistance - feasibility grants, capital grants, employment grants, equity grants, support enterprise and the creation and maintenance of jobs
FÁS/ Solas –community employment schemes which allows unemployed people to work in their communities on a temporary basis to help develop their skills – projects include the arts, culture, tourism, sport and the environment

Forfús – encourages the development of employment in the science and technology industry

IDA – responsible for securing overseas investment grants for foreign investors

Low corporation tax – encourages foreign companies to set up in Ireland

JobBridge – National internship scheme launched in 2011 aims to provide work experience placements for interns for 6 or 9 months – aims to break the cycle where jobseekers require experience to get a job. Interns receive an extra €50 a week in addition to their social welfare payment.

and

3.(b) Using your leisure time wisely will have long term benefits.

(i) Define leisure and discuss its value in today's society. (18)

Definition = 6 marks Discussion = 3 points @ 4 marks each

Leisure is time not spent working or meeting the necessities of life; time available for relaxation; freedom from occupation or business, etc.

Value – allows people to relax and unwind from everyday stresses; improves physical well-being; enables family bonding; encourages social interaction; good example to children in relation to making use of free time, etc.

(ii) Discuss the factors that can influence a person's choice of leisure activities. (12)

3 points @ 4 marks each

Age – older people may be less physically able; certain sports may not be suitable for younger children (dangerous); interests vary with age; age may affect disposable income available for leisure, etc.

Gender – certain sports may be dominated by one gender; males sometimes have more leisure time than working mums; males tend to have a higher participation in sports..., etc.

Social influences – socio-economic group; where a person lives; current trends; etc.

Cultural influences – certain sports associated with different countries / counties; family culture; traditions of particular countries e.g. dance, etc.

Occupational influences – salary; choice of active/sedentary pursuits; extension of work; to network, etc.

or

3.(c) (i) Discuss the principle factors that can affect a family's requirements for childcare. (12)

3 points @ 4 marks each

Parents working full time or part time; single parent working; availability of grandparents/family members; cost of care; after school care requirements; hours of opening; availability during school holidays; proximity to family home; special needs of child, etc.

(ii) Name and evaluate two types of childcare options that are available to parents. (18)

(Name 3 marks + 2 points @ 3 marks each) x 2

e.g. nurseries and crèches; playschool/playgroup; Montessori school; childminder; au pair; after school groups, etc.

evaluative statement - i.e. advantages/disadvantages, etc.



Coimisiún na Scrúduithe Stáit
State Examinations Commission

LEAVING CERTIFICATE 2012

MARKING SCHEME

HOME ECONOMICS – SCIENTIFIC AND SOCIAL FOOD STUDIES COURSEWORK

(400 Marks / Weighted Mark 80)
(To calculate weighted mark-divide the raw mark by five)

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 indicates 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 preparation, food preparation processes, cooking time /temperature, serving /presentation, wash-up, 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

As people grow older, it is important that their changing dietary and nutritional needs are considered when planning meals.

Research and elaborate on the nutritional needs and the meal planning guidelines that older people should consider when planning meals.

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

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 **older people** should consider when planning meals*
- *relevant meal planning guidelines with specific reference to **older people***
- *range of menus for 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 older people with reasons for possible variations, high fibre, Vitamin C / iron absorption, Vitamin D / calcium absorption, need to increase B6, B12, and folate due to low intakes and malabsorption, possible variations in energy requirements – older people tend to be less active so need fewer calories as they have a lower BMR rate, energy balance vis a vis activity levels, current nutritional guidelines re nutrient and food intake, use of meal supplements e.g. drinks – Ovaltine, Milo, Ensure, etc.*

Meal planning guidelines – *use of food pyramid to ensure balance, variety of foods, personal likes and dislikes, correct fluid intake to prevent dehydration - 8 glasses of fluids per day, high fibre foods, increase calcium, avoid foods high in salt, saturated fat and sugar i.e. convenience foods, if choosing convenience foods chose fortified foods, healthy snacks, easily digested foods, use of foods in season – resource issues, smaller portions, consider easy to eat / chew foods for older people with dental problems, physical limitations e.g. arthritis, use of pre-prepared / easy to prepare foods, medical conditions may influence foods eaten, sensory changes – taste for food may change, medicines do not mix with all types of foods, they can affect the absorption and metabolism of nutrients, anti-inflammatory drugs cause stomach upsets, use of milk powder to boost calcium, protein and calorie content, etc.*

Dishes selected – range of menus for main meal

- **must be suitable for older people**
- **must be a main course.**

Evaluation (specific requirements of assignment)

Analysis of findings regarding the nutritional requirements of main course dishes for older people.

Meal planning guidelines – range of main course dishes suitable for older people, how the selected dish meets the requirements as identified in the investigation.

Assignment 2

Research shows that childhood obesity has reached epidemic proportions in Europe, with body weight now the most prevalent childhood disease..... the number of children who are significantly overweight has trebled over the past decade.

(Report of the National Taskforce on Obesity 2005)

With reference to this statement, investigate and elaborate on the dietary practices, the nutritional needs and the factors that should be considered when planning meals for school-going children in order to maintain a healthy weight.

Having regard to the factors identified in your research write a menu (three meals) for **one** day, that includes a packed lunch, suitable for school-going children. 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

- ***nutritional requirements for school going children in order to maintain a healthy weight***
- ***dietary practices/meal planning guidelines for school children in order to maintain a healthy weight***
- ***menu for one day (three meals) that includes a packed lunch***
- ***chosen main course dish and reasons for choice.***

Investigation

Nutritional requirements - *nutritional balance, daily requirements of macro / micro- nutrients including protein / cho / fat / iron / calcium requirements as appropriate, high fibre, Vitamin C / iron absorption, Vitamin D / Calcium absorption, increase phosphorus intake, follow current nutritional guidelines re nutrient and food intake with particular reference to requirements for school going children, appropriate energy balance, etc.*

Dietary Practices/Meal planning guidelines – *use of food pyramid to ensure balanced meals, establish pattern of eating three regular balanced meals each day starting with a good breakfast, parents should give good example – be a role model for healthy eating, appropriate portion size, use vegetables/ healthy snacks instead of sweets as a reward for positive behaviour, make vegetables interesting to eat – cut into different shapes, cut down/avoid processed, snack and empty kilo calorie foods, avoid refined carbohydrate foods and replace with wholemeal products, mix in good foods with ‘junk’ foods slowly and progressively, select foods with low GI (glycemic index), choose poultry, white fish, lean meats, cut fat off meats, avoid foods with hidden fats i.e. cakes, biscuits, pastries etc. replace with a variety of fruit and vegetables, avoid unhealthy cooking methods e.g. grill instead of frying, steam, boil or bake all foods, drink water and natural fruit juices instead of fizzy drinks, avoid foods high in salt, sugar and saturated fat, make vegetable and fruit drinks, substitute fruit for sweets, get children involved in shopping and preparing food, serve new foods with favourite foods, plan healthy meals/lunches that are quick to eat as children may be in a rush, etc.*

Dishes selected – **menu for one day (three meals) that includes a packed lunch**

- **should meet the nutritional requirements as identified for school going children in order to maintain a healthy weight**
- **must be a main course**

Evaluation (specific requirements of assignment)

Analysis of findings regarding what you learned from the investigation regarding the management of a diet for school going children in order to maintain a healthy weight, factors that should be considered when planning meals for school going children who wish to maintain a healthy weight, and 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

Electric food mixers and hand blenders are essential items of kitchen equipment for many cooks.

Select either an electric food mixer **or** an electric hand blender and research

- the different types available (brands, prices, features, etc.)
- uses i.e. different functions of the piece of equipment
- dishes / foods that can be prepared using this item of equipment
- the key points essential to making a dish using this equipment.

Prepare, cook and serve either a soup **or** a dessert that you have investigated using the selected item of equipment.

Evaluate the assignment in terms of **(a)** implementation, **(b)** the advantages and or the disadvantages of using the selected item of equipment.

Key requirements of the assignment

- *research on the **different types of electric food mixers or electric hand blenders** (brands, prices, features etc.)*
- ***uses** i.e. different functions of the item of equipment selected and the **dishes / foods** that can be prepared*
- *the **key points essential to making a dish using this equipment***
- *chosen dish **soup or dessert** and reasons for choice.*

Investigation

Brands of electric food mixers /electric hand blenders available: Kenwood, Moulinex, Philips, Bosch, Gordon Ramsey, Russell Hobbs, James Martin, Ready Steady Cook, etc.

Electric food mixers (Free standing, hand held, combination, food processors) - Wattage: 120 –1200 watts; **Speeds:** 1- 12; **Cost:** €6 - €500; **Special Features** – variable speed control, turbo speed / boost button, chrome finish, soft touch handle / easy grip, easy to clean stainless steel bowl, bowls up to 5 litres, beaters, hooks and whisks, flexible beater tool, K-lene coated(non stick), removable mixer head can be used as hand mixer, splash / pour guard, load sensing technology, timer, automatic bowl scraper, over load cut out, cord storage, dishwasher safe, cordless, swivel cord to use with each hand etc. **Attachments** – whisk – balloon & power, beaters and dough hook, liquidiser, shredder, pasta maker, fruit press, ice cream maker, juice extractor, spatula, dust cover etc. **Bowl Capacity:** up to 6.7 litres, etc.

Uses: Beater: creaming fat and sugar in cake making etc. **Whisk:** whisking cream, meringues and batters etc.

Hook: making bread and pastry, etc.

Dishes / foods that can be prepared using electric food mixer e.g. cakes – sponge, maderia, etc, biscuits, pastry, stuffings, crumbing, icings, mashing vegetables, batters, whipping cream, meringues, etc.

Key points essential for the successful use of electric food mixer: use the correct attachment for the mixture, do not exceed the maximum capacity or you will overload the motor, lock bowl in place before starting mixer, use a slower speed to start and when adding dry ingredients, have fat at room temperature, use the splashguard to keep foods like icing sugar and flour contained during mixing but make sure it is removed before whisking so the air can circulate freely, stop and scrape mixture from sides of bowl when mixing, make sure beaters are in mixture before turning on, mixers with smaller motors cannot be left running for too long, clean after use, do not use attachments e.g. liquidiser at the same time as beating, etc.

Hand blender: Wattage: 220 – 800 watts; **Speeds:** 1 – 16; **Cost:** €6 - €90; **Special Features** – pulse function, turbo button for tough ingredients, anti splash blade guard, detachable stainless steel blades and shaft, soft grip handle, safety cap, easy to clean plastic casing, automatic cut off if overheating occurs, cordless, accessories dishwasher safe etc. **Attachments** – plastic beaker, chopper, whisk, metal / plastic wand and three blade system, masher, ice crusher, extra large pan blender for blending soups directly in saucepan, etc.

Uses: blending, chopping, whisking, mashing, frothing, etc.

Dishes / foods that can be prepared using electric hand blender e.g. soups, sauces / gravies, fruit & vegetables - smoothies, bread crumbs for stuffings, toppings for meat & fish, almonds, pates, etc.

Key points essential for successful use of hand blender: *do not immerse the motor in liquid, do not touch blades when plugged in, if the blades get stuck unplug the appliance before you remove the ingredients that block the blades, cut large ingredients into small pieces, immerse the blade completely into ingredients before turning on, switch off the appliance before you remove from liquid, blending or before changing attachments, do not exceed the quantities and processing times in instructions, use correct proportion of solids and liquids, allow appliance to cool down between/before continuing processing, do not use blender for meat, cheese, etc.*

Dishes selected – must be a soup or dessert from research suitable for preparation using the electric food mixer or electric hand blender

Evaluation (as specified in assignment) - *advantages and or disadvantages of using an electric food mixer or electric hand blender.*

Area of Practice C: Food Technology

Assignment 4

Chutneys and relishes are made from a combination of fruit and vegetables with vinegar, sugar, spices, salt etc. They are an excellent way of using up a surplus of fruit and vegetables, particularly as the flavour improves with storage.

Investigate (i) the different fruits and vegetables that can be preserved in this way

(ii) how this method of preservation is carried out

(iii) the underlying principles involved

(iv) the possible problems which may arise.

Using your choice of fruit/vegetables, prepare and pot a chutney **or** relish. Include details of the container and the labelling you used.

Evaluate the assignment in terms of (a) implementation, (b) practicability of making home made chutneys/relishes.

Key requirements of the assignment

Investigate:

- *the different fruits and vegetables that can be preserved to make chutneys/relishes*
- *how the method of making chutney /relishes is carried out*
- *the underlying principle involved*
- *the possible problems that may arise*
- *details of container, cover and labelling*
- *chosen product and reasons for choice*

Investigation

Research different fruit and vegetables that can be preserved to make chutney/relishes:

Fruit – *apples, pears, apricots, plums, gooseberries, green mangos, nectarines, cranberries, blackberries, dates, rhubarb, bananas, raisins, sultanas, damson, pumpkin, coconut, papaya, pineapple etc.*

Vegetables – *red & green tomatoes, green & red peppers, marrows, onions, white cabbage, garlic, beetroot, corn kernels shallots, chillies, etc.*

How the method of making chutney/ relishes is carried out:

Fruit and or vegetables are washed, peeled and chopped, simmered in saucepan until soft, sugar is dissolved in mixture, brought back to boil, all other ingredients are added, simmered until thick, potted, covered, labelled and stored in a cool dark place for at least one month to develop flavour, ingredients for relishes are cut into larger pieces as they have a chunkier texture, sugar & vinegar preserve them and give the characteristic sweet-and-sour flavour, long cooking of sugar darkens the colour, relishes are cooked for shorter length of time, spices that are aromatic, mild or hot and pungent are used, spices mellow with age and so chutneys benefit from being left for a couple of months before been eaten, relishes are fresh-tasting while chutneys have a more mellow flavour, brown malt vinegar/brown sugar gives a better colour than white vinegar/white sugar, etc.

Underlying principles involved – *chutney/relish using a mixture of fruit and or vegetables is **boiled to 100°C**, destroys micro-organisms and lowers available moisture needed for growth, preserved by use of vinegar, salt & spices, **vinegar reduces the ph** of the food with the natural acids of the fruit and provides conditions unfavourable for micro organisms to grow, liquid passes from the micro-organisms by **osmosis** to the food in an attempt to correct the imbalance, **dehydrates the micro-organisms**, thus destroys them, high concentration of sugar causes water to pass out of bacterial cells by osmosis, sugar salt & spices act as preserving agents also, heat denatures enzymes, etc.*

Possible problems that may arise

If chutney is not boiled for long enough it may have a runny consistency, vinegar can have a hardening effect, chutney should be cooked at a low heat until the sugar is dissolved, boiled for too long/too short a time will result in chutney that has a dark/light colour, chutney must be stirred during cooking to prevent it sticking to bottom of saucepan and to prevent 'caking', heat jars to avoid breakage when hot chutney is added, do not allow metal lids to be in contact with product as the metal will react with vinegar and cause discolouration and poor flavour, shrinks / dries out if not sealed properly, liquid on top of jar if chutney has not been cooked sufficiently, etc.

Suitable containers and labelling for chutney/relishes *e.g. glass jars, screw top lacquered / plastic coated lids, vinegar proof paper, freezer bags, greaseproof paper with circle of cotton dipped in wax or fat, labels, etc. If no packaging investigated – 3 marks*

Dishes selected – chutney or relish using fruit/vegetables.

Evaluation (as specified in assignment) *Practicability of making homemade chutneys and relishes – resource issues – time, skills, equipment, packaging, storage, availability of ingredients, cost factors, etc.*

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

Assignment 5

Eggs have a wide variety of culinary uses attributable to their properties.

Carry out research on the properties and the related culinary uses of eggs, explaining the principle involved in each case. Identify dishes that illustrate the use of each property. Prepare, cook and serve **one** of the dishes that you have investigated, which has eggs as a key ingredient.

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

Key requirements of the assignment

- identify 3 properties of eggs and explain the related principles
- identify related culinary uses of each property and dishes that illustrate use
- chosen dish and reasons for choice.

Properties of eggs: *coagulation, aeration / foam formation, emulsification.*

Principle of each property, culinary uses and dishes that illustrate each property:

Coagulation: *protein in eggs sets in cooking, proteins in the white coagulate between 60°C and 65°C causing the egg white to become opaque and solid, proteins in the egg yolk coagulate between 65°C and 70°C, coagulation causes the protein chain to unravel, straighten and bond together around small pockets of water, curdling can be caused by the addition of too much heat too quickly or for too long a time, eggs should be well beaten to combine white and yolk so one does not set quicker than the other, etc.*

Culinary application/dishes: **Cooking:** *boiled, poached, fried or scrambled eggs etc.* **Thickening:** *omelettes, custards, etc.* **Coating:** *fish, chicken, etc.* **Binding:** *burgers, fish cakes, etc.* **Glazing:** *apple tart, scones, etc.* **Clarifying:** *consommé, jellies, etc.*

Aeration / foam formation: *egg protein can trap air and produce a foam, whisking egg whites introduces bubbles of air into mixture, whisking also produces heat to coagulate albumin slightly, protein chains unravel, straighten and line up around the air bubbles, form a thin layer around the bubbles and the mixture becomes stiff, formation of a temporary white foam, in cooking coagulation of the protein chains occurs and sets the foam permanently or it will collapse, gelatine can be used to set the foam, etc.*

Culinary applications/dishes: *meringues, soufflés, cheesecake, mousse, sponge cakes, etc.*

Emulsification: *egg yolk contains lecithin an emulsifying agent, when lecithin is added to liquids e.g. oil and vinegar that are immiscible, the two liquids are held together in an emulsion, lecithin surrounds the droplets and prevents them separating, emulsifier lecithin consists of hydrophilic(water loving) head & hydrophobic(water hating) tail, hydrophilic part attracted to the water(vinegar) part, hydrophobic part is attracted to the oil part, holds the two liquids together and prevents them from separating, oil-in-water emulsion (mayonnaise), etc.*

Culinary applications/dishes: *mayonnaise (oil, egg & vinegar), hollandaise sauce (vinegar & butter), cake making (sugar & fat), ice cream, etc.*

Dishes selected – must illustrate a culinary application of a property investigated.

Evaluation (as specified in assignment)

Success of the property / properties selected when making the dish.

Area of Practice E: Comparative Analysis including Sensory Analysis

Assignment 6

Salted crisps are a predominant part of the snack food market.

Investigate the range of salted crisps available (i.e. types, brands, flavours, etc.)

Purchase **two** different brands of salted crisps. The crisps should be the same variety/type and flavour but contain different amounts of salt. Using a directional paired comparison test, compare the crisps in terms of saltiness.

Evaluate the assignment in terms of **(a)** implementation and **(b)** the test results obtained (i.e. an analysis of the factors that may have contributed to the test results obtained).

Key requirements of the assignment

- *research on the range of salted crisps available (i.e. types, brands, flavours, salt content etc.)*
- **directional paired comparison test** (description, aim and possible outcomes)
- *conditions to be controlled during testing*
- *selected crisps and reasons for choice.*

Investigation

- Research / Investigation of products appropriate to the testing
i.e. investigate the range of salted crisps available(i.e. types, brands, flavours, etc.). = 20
- **Directional paired comparison test**

Description: *tester is presented with two coded samples, tester is asked to determine which of the samples has a greater degree of intensity in terms of saltiness etc.*

Aim of test: *to determine which of the two samples of crisps is saltier*

Possible outcomes: *determine which of the crisps is the saltiest.*

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, similar quantities in each sample, coding of samples, hygiene, timing, where testing takes place, dietary considerations, understanding of the meaning of saltiness, etc.

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

Selected crisp products. (2 products @ 2 marks) = 4

State reasons for choice. (2 reasons @ 2 marks) = 4

Sources – 2 x 1 mark (2 marks) = 2

Preparation and Planning

- **Resources** = 3
- **Main equipment needed to carry out assignment**

Directional paired comparison test – *tray, glass of water, crisp products, containers with samples of food A and food B, scorecards, record sheets, pen, etc.*

Work sequence

= 3

Directional Paired Comparison Test: *code containers, label score cards and record sheet, set up trays, carry out directional paired comparison test, collect scorecards, transfer results onto record sheet, 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 etc.

Directional Paired Comparison Test (two products)

Testers should not be involved in setting up test. Code containers with symbols – one with symbol □ and one with symbol ○, set up trays with coded containers, glasses of water, arrange two different brands of crisps in coded containers, present samples in random order on each tray, follow instructions on score card, taste order should be specified on scorecard, collect cards and transfer results of each tester in group onto record sheet, count correct responses, reveal codes, present and evaluate results, 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 crisps, degree of doneness, uniformity of samples for testing, sufficient amounts, glass of water/or dry cracker included to cleanse the palate, importance of silence during testing, taste order, random order presentation, 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 – nuts, special diets e.g. celiac, set-up of test area 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

Test results obtained, factors that may have contributed to the test results obtained etc.

Band A = 4 marks

Band B = 3 marks

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.
 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 school going children to maintain a healthy weight** - Assignment 2
 - 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.**

