

General Certificate of Secondary Education 2024

Home Economics: Food and Nutrition

Written Paper

[G9521]

THURSDAY 23 MAY, AFTERNOON

MARK SCHEME

General Marking Instructions

Introduction

The main purpose of the mark scheme is to ensure that examinations are marked accurately, consistently and fairly. The mark scheme provides examiners with an indication of the nature and range of candidates' responses likely to be worthy of credit. It also sets out the criteria which they should apply in allocating marks to candidates' responses.

Assessment objectives

Below are the assessment objectives for Home Economics: Food and Nutrition.

Candidates should be able to:

- **AO1** Recall, select and communicate their knowledge and understanding of a range of contexts.
- **AO2** Apply skills, knowledge and understanding in a variety of contexts and in planning and carrying out investigations and tasks.
- **AO3** Analyse and evaluate information, sources and evidence, make reasoned judgements and present conclusions.

Quality of candidates' responses

In marking the examination papers, examiners should be looking for a quality of response reflecting the level of maturity that may reasonably be expected of a 16-year-old, the age at which the majority of candidates sit their GCSE examinations.

Flexibility in marking

Mark schemes are not intended to be totally prescriptive. No mark scheme can cover all the responses which candidates may produce. In the event of unanticipated answers, examiners are expected to use their professional judgement to assess the validity of answers. If an answer is particularly problematic, then examiners should seek the guidance of the Supervising Examiner.

Positive marking

Examiners are encouraged to be positive in their marking, giving appropriate credit for what candidates know, understand and can do rather than penalising candidates for errors or omissions. Examiners should make use of the whole of the available mark range for any particular question and be prepared to award full marks for a response which is as good as might reasonably be expected of a 16-year-old GCSE candidate.

Awarding zero marks

Marks should only be awarded for valid responses and no marks should be awarded for an answer which is completely incorrect or inappropriate and not worthy of credit.

Types of mark schemes

Mark schemes for tasks or questions which require candidates to respond in extended written form are marked on the basis of levels of response which take account of the quality of written communication.

Other questions which require only short answers are marked on a point for point basis with marks awarded for each valid piece of information provided.

Levels of response

In deciding which level of response to award, examiners should look for the 'best fit' bearing in mind that weaknesses in one area may be compensated for by strength in another. In deciding which mark within a particular level to award to any response, examiners are expected to use their professional judgement.

The following guidance is provided to assist examiners:

Threshold performance: Response which just merits inclusion in the level and should be awarded a mark at or near the bottom of the range.

Intermediate performance: Response which clearly merits inclusion in the level and should be awarded a mark at or near the middle of the range.

High performance: Response which fully satisfies the level description and should be awarded a mark at or near the top of the range.

Quality of written communication

Quality of written communication is taken into account in assessing candidates' responses to all tasks and questions that require them to respond in extended written form. These tasks and questions are marked on the basis of levels of response. The description for each level of response includes reference to the quality of written communication.

For conciseness, quality of written communication is distinguished within levels of response as follows:

Level 1: Quality of written communication is basic.

Level 2: Quality of written communication is competent.

Level 3: Quality of written communication is highly competent.

In interpreting these level descriptions, examiners should refer to the more detailed guidance provided below:

Level 1 (Basic): The candidate makes only a limited selection and use of an appropriate form and style of writing. The organisation of material may lack clarity and coherence. There is little use of specialist vocabulary. Presentation, spelling, punctuation and grammar may be such that intended meaning is not clear.

Level 2 (Competent): The candidate makes a reasonable selection and use of an appropriate form and style of writing. Relevant material is organised with some clarity and coherence. There is some use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are sufficiently competent to make meaning evident.

Level 3 (Highly competent): The candidate successfully selects and uses the most appropriate form and style of writing. Relevant material is organised with a high degree of clarity and coherence. There is extensive and accurate use of appropriate specialist vocabulary. Presentation, spelling, punctuation and grammar are of a high standard and ensure that meaning is clear.

	Read the following statements and tick the box beside each correct answer. Fick only one box for each statement. (AO1)		
(a)	Which one of the following conditions is caused by an intolerance to glute	en?	
	D coeliac disease	[1]	
(b)	Which one of the following benefits applies to basing your meals on starc foods?	hy	
	B helps to control weight by making you feel fuller for longer	[1]	
(c)	Which one of the following foods is a good source of vitamin C?		
	A grapefruit	[1]	
(d)	Which one of the following steps is not involved in the secondary process of wheat into bread?	sing	
	D frying	[1]	
(e)	Which one of the following food additives is used to extend shelf life?		
	A preservatives	[1]	
(f)	Which one of the following foods is not a novel source of protein?		
	C lentils (6 × [1])	[1]	
(a)	Circle three foods from the list below which belong to the 'Dairy and Alternatives' section of the Eatwell Guide. (AO1)		
	Answers should reflect the following:		
	 Stilton cheese oat milk single cream (3 × [1]) 	[3]	
(b)	Explain the function of vitamin D in the diet. (AO1, AO2)	[-]	
. /	 Answers may address the following: helps absorb calcium from food regulates the amount of calcium in the body helps keep bones and teeth healthy prevents relevant dietary related disorders e.g. osteoporosis supports the immune system helps nerve and muscle function All other valid responses will be given credit [1] simple statement		
	[2] accurate explanation of the function of vitamin D (1 × [2])	[2]	

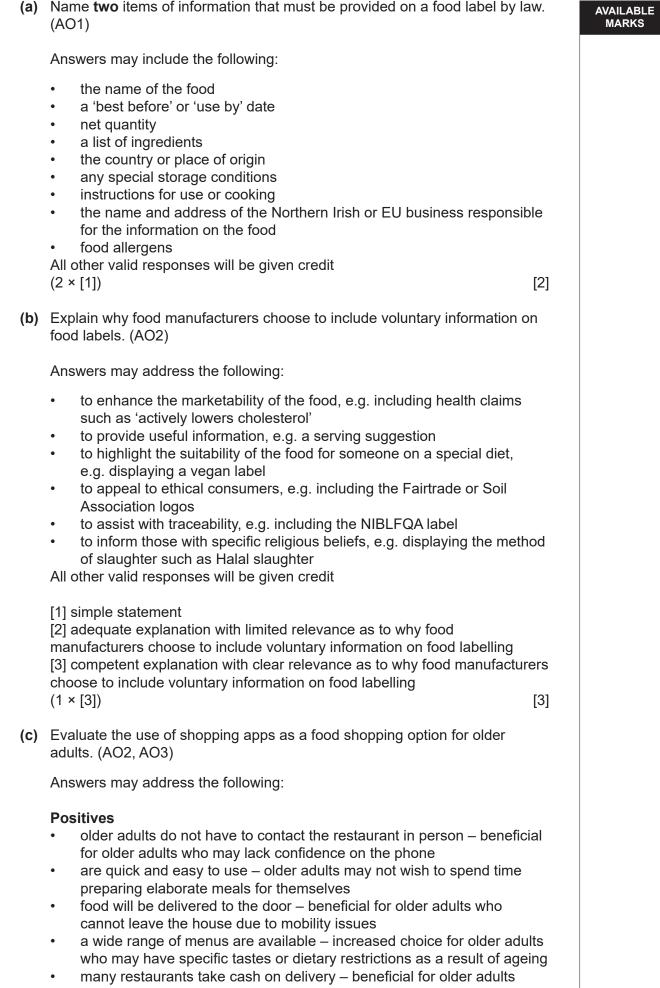
AVAILABLE MARKS

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1

(c)	Discuss the effects of calcium deficiency on the body. (AO1, AO2)		AVAILABLE MARKS
	Answers may address the following:		
	 deficiency can lead to rickets in children and osteomalacia in adults may reduce peak bone mass which can lead to osteoporosis contributes to skeletal deformities due to lack of bone density may cause muscle spasms and cramping results in weakened nails, slower hair growth and thinning of the skin can impact on dental health All other valid responses will be given credit 		
	 [1] simple statement [2] adequate discussion of the effects of calcium deficiency on the body [3] competent discussion of the effects of calcium deficiency on the body [4] highly competent discussion of the effects of calcium deficiency on the body (1 × [4]) 	[4]	9
\$ (a)	Identify two food sources of salmonella food poisoning bacteria. (AO1)		
	Answers may include the following:		
	 poultry raw meat eggs unpasteurised milk raw unwashed vegetables All other valid responses will be given credit (2 × [1]) 	[2]	
(b)	Explain how food poisoning can affect the body. (AO1, AO2)		
	Answers may address the following:		
	 symptoms can take 12–48 hours to affect the body and can last between 4–7 days, including fever, diarrhoea, vomiting and abdomina pain can cause dehydration due to fluid loss caused by vomiting and diarrhoea can cause serious illness, particularly for young children, pregnant women and older adults All other valid responses will be given credit 	al	
	[1] simple statement[2] accurate explanation of effects on the body(1 × [2])	[2]	

(c)	Discuss ways to prevent salmonella food poisoning when preparing meals at home. (AO2, AO3)		AVAILABLE MARKS
	Answers may address the following:		
	 keep raw foods such as poultry away from cooked and ready to eat foods 		
	 ensure chicken and eggs are thoroughly cooked until piping hot, to 70°C for at least 2 minutes 		
	 if suffering from food poisoning do not handle foods until 48 hours after symptoms have stopped 		
	 ensure good personal hygiene, e.g. wash hands before preparing food, after handling raw meat and after going to the toilet All other valid responses will be given credit. 		
	 [1] simple statement [2] adequate discussion of ways to prevent salmonella food poisoning [3] competent discussion of ways to prevent salmonella food poisoning [4] highly competent discussion of ways to prevent salmonella food poisoning (1 × [4])]	8
4	Explain the following barriers to being an effective consumer when shopping for food. (AO1, AO2)		
	Answers may address the following:		
	 (i) Knowledge can affect ability to understand rights and responsibilities can affect ability to make a complaint can limit awareness of food labelling schemes can affect understanding of food legislation can limit understanding of food shopping offers [2]]	
	 (ii) Resources lack of time can affect ability to shop around for food offers or make a complaint lack of money can affect ability to shop at higher end supermarkets or purchase premium brands lack of equipment can limit the variety of foods purchased e.g. reliance on microwave meals lack of facilities can affect food storage in the home, which impacts on the quantity of food that can be purchased All other valid responses will be given credit 		
	[1] simple statement[2] accurate explanation of barriers(2 × [2])[2]]	4



Negatives

- require the use of a device older adults may not have the necessary technology to order food via a shopping app
- require understanding of app technology many older adults lack confidence with new technologies and may be reluctant to order food this way
- delivery and technology charges can be expensive a disadvantage for retired older adults on a restricted or lower income
- can promote over-reliance on fast food could lead to weight gain for older adults who have reduced energy expenditure
- can discourage food preparation at home can lead to skill loss in older adulthood

All other valid responses will be given credit

[0] is awarded for a response not worthy of credit

Answers must include both positive and negative points and address older adults to access Level 3.

Level 1 ([1]-[2])

Overall impression: basic

- shows limited knowledge and understanding of the use of shopping apps as a food shopping option for older adults
- identifies and comments on a few obvious points relevant to the question
- a limited evaluation applied in simple terms to the question

Level 2 ([3]-[4])

Overall impression: competent

- shows good knowledge and understanding of the use of shopping apps as a food shopping option for older adults
- identifies and comments on some key points relevant to the question
- a competent evaluation applied accurately to the question

Level 3 ([5]-[6])

Overall impression: highly competent

- shows excellent knowledge and understanding of the use of shopping apps as a food shopping option for older adults
- identifies and comments on a range of key points relevant to the question
- a highly competent evaluation applied accurately within the context of the question

(1 × [6])

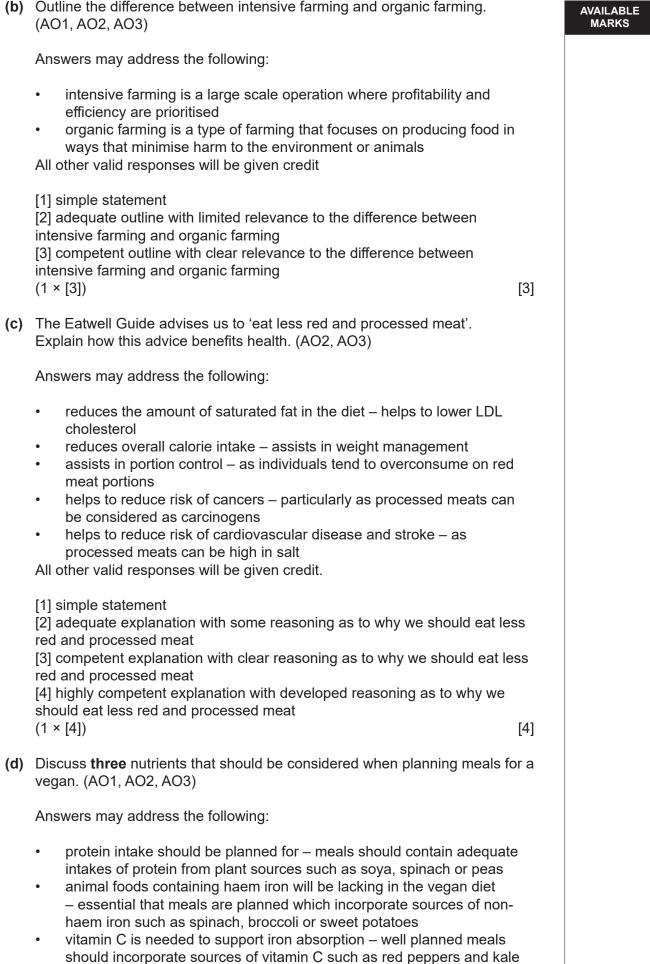
[6]

(d) Assess the use of financial incentives in supermarkets to influence consumer food choice. (AO2, AO3)

Answers may address the following:

- special offers offers such as 'buy one get one free' are used in the hope that consumers will buy more food products than are needed
- loss leaders food products priced so low that the supermarkets lose money on the item, used to encourage consumers to spend more money on other food products
- own brand promotions cheaper than branded products, often encourage consumers to buy greater volumes of food
- loyalty cards used to promote store and brand loyalty by offering discounts or money off vouchers. Many supermarkets also offer other rewards through their loyalty cards such as hotel vouchers or discounted insurance products

		 price checking – used to highlight savings on food products in comparison with other supermarkets. Many supermarkets offer mone off where price comparisons are not favourable free gifts – used to add value to initial purchases and encourage consumers to spend more. For example, stuffed toys or kitchenware sets awarded for free when consumers spend over a certain amount food products All other valid responses will be given credit [0] is awarded for a response not worthy of credit Answers must refer to supermarkets to access Level 3. 	-	AVAILABLE MARKS
		 Level 1 ([1]–[2]) Overall impression: basic shows limited knowledge and understanding of the use of financial incentives in supermarkets to influence consumer food choice identifies and comments on a few obvious points relevant to the question a limited assessment applied in simple terms to the question 		
		 Level 2 ([3]–[4]) Overall impression: competent shows good knowledge and understanding of the use of financial incentives in supermarkets to influence consumer food choice identifies and comments on some key points relevant to the question a competent assessment applied accurately to the question 		
		 Level 3 ([5]–[6]) Overall impression: highly competent shows excellent knowledge and understanding of the use of financial incentives in supermarkets to influence consumer food choice identifies and comments on a range of key points relevant to the question 		
		 a highly competent assessment applied accurately within the context the question (1 × [6]) 	of [6]	17
6	(a)	Identify three foods that are grown. (AO1)		
		 Answers may include the following: cereals, e.g. wheat, barley fruit, e.g. apples, strawberries vegetables, e.g. celery, carrots herbs, e.g. parsley, chives oilseed, e.g. rapeseed All other valid responses will be given credit. 		
		(3 × [1])	[3]	



- to assist in the absorption of non-haem iron
- vitamin B12 is not present in plant foods essential to include sources of vitamin B12 such as fortified breakfast cereals and soy products

	•	dairy foods providing calcium will be lacking in the vegan diet – meals should be planned to include non-dairy milks which have been fortified with calcium or plant based sources of calcium such as kale and broccoli	AVAILABLE MARKS
		[0] is awarded for a response not worthy of credit	
		Answers must refer to three nutrients to access Level 3	
		 Level 1 ([1]–[2]) Overall impression: basic shows limited knowledge and understanding of nutritional factors to be considered when planning meals for a vegan identifies and comments on a few obvious points relevant to the question a limited discussion applied in simple terms to the question Level 2 ([3]–[4]) Overall impression: competent shows good knowledge and understanding of nutritional factors to be 	
		 considered when planning meals for a vegan identifies and comments on some key points relevant to the question a competent discussion applied accurately to the question 	
		 Level 3 ([5]–[6]) Overall impression: highly competent shows excellent knowledge and understanding of nutritional factors to be considered when planning meals for a vegan identifies and comments on a range of key points relevant to the question 	
		 a highly competent discussion applied accurately within the context of the question 	16
,	(-)	$(1 \times [6])$ [6]	10
	(a)	Write down three foods which are sources of free sugars. (AO1) Answers may include the following:	
		 cakes biscuits pastries fruit juices ice cream energy drinks honey, syrup and jams All other valid responses will be given credit. (3 × [1]) [3] 	
	(b)	Explain three ways to control portion size. (AO1, AO2)	
		Answers may address the following:	
		 use a smaller sized plate – this will help to avoid overloading on larger plates serve meals on individual plates – this avoids the temptation of second 	
		 serve meals on individual plates – this avoids the temptation of second helpings when food is served on platters follow a recipe – this will encourage accurate weighing and measuring of ingredients such as rice or pasta 	

avoid doubling up on carbohydrates – meals that have a substantial

carbohydrate serving such as rice should not be served with bread on

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Answers may address the following:

 keep a reusable bottle – this avoids cost of buying new drinks acting as a barrier AVAILABLE MARKS

- add flavour to water this will encourage individuals who do not enjoy the taste of water to drink more
- eat more fruit and vegetables fruits such as watermelon, strawberries and grapefruit and vegetables such as celery or cucumber have a high water content
- incorporate into meals and snacks soups and stews made with stock are a good source of water at mealtimes

All other valid responses will be given credit

[1] simple statement

- [2] adequate explanation with limited reference to increasing fluid intake
- [3] competent explanation with clear reference to increasing fluid intake [3]
- (b) Examine the importance of adequate fluid intake for an adolescent. (AO1, AO2, AO3)

Answers may address the following:

- needed to avoid dehydration as adolescents can be quite active, adequate intakes are needed to replace fluids lost through sweat
- fluid acts as a lubricant and shock absorber in joints important for adolescents as they are generally more active than other lifecycle groups
- adequate fluid intakes are essential to promote concentration important for adolescents as school work becomes more challenging and requires greater mental stimulation than in childhood
- helps to promote healthy skin important as acne can be common in adolescence due to hormonal changes
- important for adolescent females who have begun to menstruate drinking at least 8-10 glasses of water a day during menstruation helps in fighting bloating and cramps

All other valid responses will be given credit

[0] is awarded for a response not worthy of credit

Level 1 ([1]-[2])

Overall impression: basic

- shows limited knowledge and understanding of the importance of adequate fluid intake for an adolescent
- identifies and comments on a few obvious points relevant to the question
- a limited discussion applied in simple terms to the question

Level 2 ([3]-[4])

Overall impression: competent

- shows good knowledge and understanding of the importance of adequate fluid intake for an adolescent
- identifies and comments on some key points relevant to the question
- a competent discussion applied accurately to the question

		 Level 3 ([5]–[6]) Overall impression: highly competent shows excellent knowledge and understanding of the importance of adequate fluid intake for an adolescent identifies and comments on a range of key points relevant to the question a highly competent examination applied accurately within the context of the question (1 × [6]) [6] 	AVAILABLE MARKS 9
9	(a)	Identify the two types of fibre present in food. (AO1)	
		Answers should reflect the following:	
		 soluble insoluble (2 × [1]) [2] 	
	(b)	Discuss the role of fibre in the diet. (AO1, AO2)	
		Answers may address the following:	
		 aids digestion - as helps the body to get rid of waste prevents constipation and other bowel related disorders such as diverticulitis is filling and helps to reduce snacking between meals – assists with weight management can lower blood cholesterol levels – helps to reduce risk of cardiovascular disease can help with control of blood sugar levels – assists in the management of diabetes 	
		 [1] simple statement [2] adequate discussion with some reasoning regarding the role of fibre in the diet [3] competent discussion with clear reasoning regarding the role of fibre in the diet [4] highly competent discussion with developed reasoning regarding the role of fibre in the diet (1 × [4]) 	6

10 The quality of your written communication will be assessed in this question.

Analyse the influence of ethical and environmental factors on consumers when shopping for food. (AO1, AO2, AO3)

Answers may address the following:

Ethical factors

- sustainable fishing ethical consumers are more likely to buy fish products that have been sustainably fished in order to avoid over-fishing
- animal welfare ethical consumers are more likely to buy food products which have safeguarded their impact on animal welfare such as free range eggs or dolphin friendly tuna
- vegan and vegetarian diets many ethical consumers choose to alter their diet to avoid reliance on animal sources of food, either on a permanent basis or through, e.g. meat free months
- Fairtrade foods ethical consumers are more likely to purchase Fairtrade food products where standards of welfare for producers are guaranteed and child labour is prohibited
- cosmetic standards ethical consumers are more likely to purchase food products that do not conform to typical cosmetic standards in order to avoid food waste

Environmental factors

- packaging environmentally concerned consumers may wish to avoid excess food packaging or be more likely to choose recyclable packaging and refill packs
- food miles these consumers may be more likely to purchase locally produced food and be less willing to travel long distances to purchase food in order to reduce carbon footprint
- plant based diets many consumers are adopting a plant based diet as it has a lower environmental impact than meat production
- bags for life many consumers are turning to cloth bags or reusable bags for life when food shopping to reduce the environmental impact of plastic carrier bags
- production methods environmentally concerned consumers are more likely to purchase foods bearing the Soil Association logo as organic foods are produced using more environmentally friendly methods

All other valid responses will be given credit

Answers must refer to both ethical and environmental factors in order to access Level 3

Responses that are list like cannot access Level 3 [0] is awarded for a response not worthy of credit

Level 1 ([1]-[3])

Overall impression: basic

- shows limited knowledge and understanding of the influence of ethical and environmental factors on consumers
- identifies and comments on a few obvious points relevant to the question
- a limited analysis applied in simple terms to the question
- quality of written communication is basic

	 Level 2 ([4]–[6]) Overall impression: competent shows good knowledge and understanding of the influence of ethical and environmental factors on consumers identifies and comments on some key points relevant to the question a competent analysis applied accurately to the question quality of written communication is competent 	AVAILABLE MARKS
	 Level 3 ([7]–[9]) Overall impression: highly competent shows excellent knowledge and understanding of the influence of ethical and environmental factors on consumers identifies and comments on a range of key points relevant to the question a highly competent analysis applied accurately within the context of the question quality of written communication is highly competent (1 × [9] [9] 	9
11	The quality of the written communication will be assessed in this question. Suggest and justify dietary advice to reduce the risk of iron deficiency anaemia. (AO1, AO2, AO3)	
	Answers may address the following:	
	 eat a wide range of foods rich in haem iron, including red meat, offal and fish eat a wide range of foods rich in non-haem iron, including green leafy vegetables, pulses and dried fruit eat plenty of foods rich in vitamin C as this helps the body to absorb iron from non-haem sources infants under 12 months should not be given cow's milk as their main drink ensure that vegan or vegetarian diets include a good range of iron rich foods other than meat avoid excess tea as tannins in tea can hinder iron absorption avoid excess wholegrains as phytates in these foods can hinder iron absorption 	
	Responses that are list like cannot access Level 3 [0] is awarded for a response not worthy of credit	
	 Level 1 ([1]–[3]) Overall impression: basic shows limited knowledge and understanding of dietary advice to reduce the risk of iron deficiency anaemia identifies and comments on a few obvious points relevant to the question a limited justification applied in simple terms to the question quality of written communication is basic 	
	 Level 2 ([4]–[6]) Overall impression: competent shows good knowledge and understanding of dietary advice to reduce the risk of iron deficiency anaemia identifies and comments on some key points relevant to the question a competent justification applied accurately to the question quality of written communication is competent 	

Level 3 ([7]-[9])

Overall impression: highly competent

- shows excellent knowledge and understanding of dietary advice to reduce the risk of iron deficiency anaemia
- identifies and comments on a range of key points relevant to the question
 a highly competent justification applied accurately within the context of the
- questionquality of written communication is highly competent(1 × [9])

[9]

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12 The quality of the written communication will be assessed in this question.

Discuss the work of the Environmental Health Practitioner in protecting consumers in relation to food safety. (AO1, AO2, AO3)

Answers may address the following:

- inspect businesses for health, safety, food hygiene and food standards the Environmental Health Practitioner (EHP) can carry out an inspection of any premise where food is manufactured or handled, such as food retailers, restaurants, schools, hospitals and airports
- follow up complaints consumers can contact the EHP if they suspect they have contracted food poisoning from a food business or if they have a complaint about food labelling or foreign objects in food
- investigate outbreaks of food poisoning the EHP will investigate any outbreak of food poisoning reported by the public or the Department of Health by carrying out inspections, seizing food, serving notices, closing or prosecuting food businesses
- enforce environmental health legislation the EHP will enforce the Food Safety (Northern Ireland) Order 1991 and the Food Hygiene Regulations (Northern Ireland) 2006
- collect samples for laboratory testing the EHP will regularly test samples of food currently on sale to the public for presence of food poisoning bacteria, toxins or other contaminants
- consumer education the EHP can provide training for food industry workers and promotes food safety education in the home through initiatives such as Food Safety Week
- advise food businesses the EHP support food businesses by providing advice on food safety and hygiene
- tackle food fraud the EHP conducts investigations with the police and other outside agencies to tackle criminals involved in food fraud, e.g. the horse meat scandal
- protect against allergens in food the EHP will work to protect consumers with food allergies from harm, providing businesses with advice and making sure allergen labelling rules are followed

All other valid responses will be given credit

Responses that are list like cannot access Level 3 [0] is awarded for a response not worthy of credit

Level 1 ([1]-[4])

Overall impression: basic

- shows limited knowledge and understanding of the work of the Environmental Health Practitioner
- identifies and comments on a few obvious points relevant to the question
- a limited discussion applied in simple terms to the question
- quality of written communication is basic

 Level 2 ([5]–[8]) Overall impression: competent shows good knowledge and understanding of the work of the Environmental Health Practitioner identifies and comments on some key points relevant to the question a limited discussion applied accurately to the question quality of written communication is competent 	AVAILABLE MARKS
 Level 3 ([9]–[12]) Overall impression: highly competent shows excellent knowledge and understanding of the work of the Environmental Health Practitioner identifies and comments on a range of key points relevant to the question a highly competent discussion applied accurately within the context of the question quality of written communication is highly competent 	
$(1 \times [12])$ [12]	12
Total	120