Chapter 1: Food science and nutrition

FOOD CHOICES

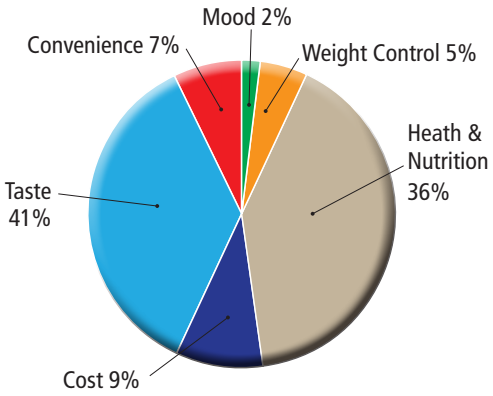
LQ **1.** Give an account of the factors that affect a consumer's choice of food. *(**20 marks** – 5 factors @ 4 m each) (HL 2011)*

Similar Question

Discuss **three** factors that affect the food choices of teenagers.

*(**12 marks** – 3 factors @ 4 m each) (OL 2005) (LQ)*

LQ **2.** Using the information presented in the pie chart comment and elaborate on the six factors which affect a person's choice of food. *(**24 marks** – 6 factors @ 4 m each) (OL 2012)*



SQ **3.** Outline **two** ways in which culture has an impact on the food choices of young people. *(**6 marks** – 2 points @ 3 m each) (OL 2015)*

LQ **4.** Discuss the role of parents in shaping their children's food choices. *(**20 marks** – 5 points @ 4 m each) (HL 2015)*

SQ **5.** Outline **two** ways in which lifestyle affects food choices and eating patterns. *(**6 marks** – 2 points @ 3 m each) (Sample)*

SQ **6.** Discuss how food availability affects food choices among Irish consumers. *(**6 marks** – 2 points @ 3 m each) (Sample)*

LQ **7.** 'The sensory aspects of food cannot be underestimated as an influence on food choices.' Discuss this statement. *(**8 marks** – 2 points @ 4 m each) (Sample)*

LQ **8.** Explain how marketing and advertising can influence an individual's food choices. *(**8 marks** – 2 points @ 4 m each) (Sample)*

Questions on Food Choices (Chapter 1) and Food Commodities (Chapter 4)

LQ **9.** Explain how (i) advertising and (ii) a person's health status might influence decision making when purchasing dairy products. *(**20 marks** – 4 points @ 5 m each) (HL 2008)*

LQ **10.** Discuss the factors that may affect consumers' decision making in relation to the purchase of meat and meat products. *(**20 marks** – 4 factors @ 5 m each) (HL 2010)*

Tip!

Make sure you refer to the food commodity mentioned in each point you give when you are answering **Questions 9**, **10** and **11**.

LQ **11.** Discuss the factors that may affect consumers' decision making in relation to the purchase of cereal products. *(**20 marks** – 4 factors @ 5 m each) (Sample)*

Food Choices – Learning Checklist

I can:	✓	✓	✓
Explain how cultural differences affect food choices			
Outline how nutritional awareness influences food choices			
Describe how families can influence food choices			
Explain how eating patterns affect food choices			
Describe how the amount of money available affects food choices			
Describe how food availability affects food choices			
Explain how the senses affect food choices			
Outline how emotions influence food choices			
Explain how health status influences food choices			
Outline how marketing and advertising techniques influence food choices			

PROTEINS

SQ **1.** List the **four** elements found in protein. *(**4 marks** – 4 elements @ 1 m each) (OL 2010)*

(i) _____

(ii) _____

(iii) _____

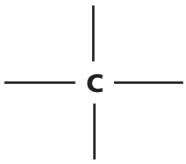
(iv) _____

Similar Question

List the elements found in protein. *(**4 marks** – 4 elements @ 1 m each) (OL 2005) (SQ)*

LQ **2.** Give an account of protein under the following heading: ***Composition***. *(**6 marks** – 1 point @ 6 m) (OL 2007)*

SQ **3.** Complete the diagram showing the basic chemical structure of an amino acid. *(**4 marks** – 1 diagram @ 4 m) (HL 2004)*



Similar Question

Give an account of protein and refer to the structure of an amino acid. *(**8 marks** – 4 points @ 2 m each) (HL 2011) (LQ)*

LQ **4.** Give an account of protein and refer to the structure of an amino acid. *(**8 marks** – 4 points @ 2 m each) (HL 2011)* ***(Higher Level Only)***

Tip!

Include diagrams for **Questions 4** and **8** to help explain your answer.

SQ **5.** What is an essential amino acid? *(**2 marks** – 1 point @ 2 m) (HL 2004)* ***(Higher Level Only)***

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Similar Question

Explain essential amino acid. *(**6 marks** – 2 points @ 3 m each) (HL 2006)* ***(Higher Level Only)*** *(LQ)*

LQ **6.** Give an account of protein and refer to how a peptide bond is formed. *(**8 marks** – 4 points @ 2 m each) (HL 2011)* ***(Higher Level Only)***

SQ **7.** Explain what is meant by ***primary*** protein structure. *(**2 marks** – 1 point @ 2 m) (OL 2005)*

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LQ **8.** Give a detailed account of protein and refer to structure (primary, secondary and tertiary).
*(**15 marks** – 3 points @ 5 m each) (HL 2014)* ***(Higher Level Only)***

Similar Question
Describe (i) the primary structure and (ii) the secondary structure of protein. *(**24 marks** – 6 points @ 4 m each) (HL 2006)* ***(Higher Level Only)*** *(LQ)*

LQ **9.** Give a detailed account of protein and refer to: classification (simple and conjugated). *(**24 marks** – 6 points @ 4 m each) (HL 2014)* ***(Higher Level Only)***

Similar Question
Give an account of proteins under the following heading: classification. *(**8 marks** – 2 points @ 4 m each) (OL 2013) (LQ)*

NOTE
The classification of proteins is Higher Level content but it was asked on an Ordinary Level paper. Therefore, examiners accepted an account of proteins under the headings 'high biological value' and 'low biological value'.

SQ **10.** Define 'conjugated proteins'. *(**6 marks** – 1 point @ 6 m) (Sample)* ***(Higher Level Only)***

SQ **11.** Give **one** source of **each** of the following proteins:

Animal: _____

Vegetable: _____

*(**2 marks** – 2 sources @ 1 m each) (OL 2010)*

Similar Question
Give an account of protein under the following heading: dietary sources. *(**12 marks** – 4 points @ 3 m each) (OL 2013) (LQ)*

LQ **12.** Explain high biological protein. *(**6 marks** – 2 points @ 3 m each) (HL 2006)*

SQ **13.** Name **three** sources of protein under **each** of the following headings:

High Biological Value	Low Biological Value

*(**6 marks** – 6 sources @ 1 m each) (OL 2007)*

SQ **14.** Name **one** food source of **each** of the proteins listed below.

Protein	Food Source
Albumin	
Caseinogen	
Collagen	
Actin	
Gluten	
Myosin	

*(**6 marks** – 6 sources @ 1 m each) (HL 2005)*

SQ **15.** Name the main type of protein found in each of the foods listed below.

Food	Type of Protein
Fish	
Eggs	
Wheat	

*(**6 marks** – 3 points @ 2 m each) (HL 2011)*

LQ **16.** Name **two** proteins present in meat. *(**6 marks** – 2 points @ 3 m each) (HL 2006)*

SQ **17.** In relation to proteins, indicate with a tick whether each of the following statements is true or false:

Protein	True	False
Proteins are large molecules made up of smaller units called amino acids		
Albumin is the protein found in egg white		
Peas, beans and lentils are examples of high biological value protein foods		

*(**6 marks** – 3 ticks @ 2 m each) (OL 2012)*

LQ **18.** Give a detailed account of protein and refer to: supplementary value/complementary role.
*(**8 marks** – 2 points @ 4 m each) (HL 2014)*

LQ **19.** Explain the following properties of protein **and** give an example of **each**: denaturation and coagulation. *(**12 marks** – 2 explanations @ 3 m each and 2 examples @ 3 m each) (OL 2013)*

SQ **20.** Name **two** methods by which protein can be denatured and give an example in each case.

Method:	Example:

*(**6 marks** – 2 methods @ 3 m each) (HL 2007)*

SQ **21.** (i) Define Maillard reaction.

(ii) State **one** culinary application associated with the Maillard reaction.

*(**6 marks** – (i) 1 point @ 4 m and (ii) 1 application @ 2 m) (Sample)*

LQ **22.** Give an account of protein and refer to: properties. *(**12 marks** – 4 points @ 3 m each) (HL 2011)*

Similar Question

Give an account of protein under the following heading: properties. *(**8 marks** – 2 points @ 4 m each) (OL 2007) (LQ)*

Tip!

Ordinary Level students should not describe gel or foam formation in their answer for Question 21 as these properties of protein are for Higher Level students only.

SQ **23.** Using the words listed below, complete the following statements in relation to the effect of heat on protein foods.

maillard reaction, coagulate, opaque

Heat causes the protein in eggs to _____.

The non-enzymic browning of protein foods is called _____.

Fish flesh changes from translucent to _____ during cooking.

*(**6 marks** – 3 points @ 2 m each) (OL 2015)*

SQ **24.** Outline **two** effects of moist heat on protein. *(**6 marks** – 2 effects @ 3 m each) (Sample)*

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SQ **25.** Complete the table below in relation to the biological functions of protein.

Type	Function
Structural proteins	
Physiologically active proteins	
Nutrient proteins	

*(**6 marks** – 3 points @ 2 m each) (HL 2013)*

LQ **26.** Give an account of protein under the following heading: functions in the body. *(**12 marks** – 2 functions @ 6 m each) (OL 2007)*

Similar Question

Give an account of protein under the following heading: functions in the body. *(**8 marks** – 2 functions @ 4 m each) (OL 2013) (LQ)*

SQ **27.** Complete the following sentences:

(i) 1 g of protein provides _____ kilocalories of energy.

(ii) On average, adults need approximately _____ g of proteins per kg of body weight per day.

*(**6 marks** – 2 points @ 3 m each) (Sample)*

SQ 28. (i) Complete the following in relation to the digestion of protein:

Organ/Gland	Enzyme	Substrate	Product
Stomach			

(ii) Identify **one** way in which amino acids are utilised by the body after digestion.

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_____

*(**6 marks** – (i) 3 points @ 1 m each and (ii) 1 point @ 3 m) (Sample)* ***(Higher Level Only)***

SQ 29. Complete the following in relation to the digestion of protein:

Organ/Gland	Secretion	Enzyme	Substrate	Product
Pancreas	Pancreatic Juice			

*(**6 marks** – 3 points @ 2 m each) (HL 2010)*

SQ 30. Complete the following statement in relation to the digestion of protein using the words listed below.

enzyme, pancreas, casein

In the stomach the _____ rennin changes caseinogen to _____.

In the duodenum the enzyme trypsin from the _____ changes peptones to peptides.

*(**6 marks** – 3 points @ 2 m each) (OL 2008)*

SQ 31. Complete the following:

Amino acids (digested proteins) pass through the wall of the _____ into the capillary network which joins up to form the _____ which carries nutrients to the liver.

*(**4 marks** – 2 points @ 2 m each) (OL 2006)*

SQ 32. Explain protein deamination. *(**6 marks** – 1 point @ 6 m) (HL 2015)* ***(Higher Level Only)***

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Protein – Learning Checklist

I can:	✓	✓	✓
Outline the elemental composition of protein			
Describe and draw the basic chemical structure of an amino acid			
Describe and draw examples of two specific amino acids			
Differentiate between essential and non-essential amino acids and list examples ***(Higher Level Only)***			
Describe and draw how peptide links are formed ***(Higher Level Only)***			
Explain the primary structure of protein			
Explain the secondary and tertiary structure of protein ***(Higher Level Only)***			
Classify proteins ***(Higher Level Only)***			
List animal and plant sources of protein			
Define biological value and distinguish between high biological value (HBV) and low biological value (LBV) protein			
List the proteins present in animal and plant sources of protein			
Describe the complementary role/supplementary value of protein and justify its importance in the diet of vegetarians			
Explain the following properties of protein: denaturation, elasticity, Maillard reaction and solubility			
Explain the following properties of protein: gel formation and foam formation ***(Higher Level Only)***			
Identify the effects of dry and moist heat on protein			
Explain the biological functions of protein			
State the Reference Intake (RI) of protein for children, adolescents, adults and pregnant/lactating women			
State the energy value of protein			
Describe the steps in the digestion and absorption of protein			
Explain the utilisation of amino acids in the body ***(Higher Level Only)***			
Outline the process of deamination in the body ***(Higher Level Only)***			