UNIVERSITY OF CAMBRIDGE INTERNATIONAL EXAMINATIONS

International General Certificate of Secondary Education

www.papacambridge.com MARK SCHEME for the November 2005 question paper

0648 FOOD AND NUTRITION

0648/01

Paper 1 maximum raw mark 100

This mark scheme is published as an aid to teachers and students, to indicate the requirements of the examination. It shows the basis on which Examiners were initially instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began. Any substantial changes to the mark scheme that arose from these discussions will be recorded in the published Report on the Examination.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the Report on the Examination.

The minimum marks in these components needed for various grades were previously published with these mark schemes, but are now instead included in the Report on the Examination for this session.

CIE will not enter into discussion or correspondence in connection with these mark schemes.

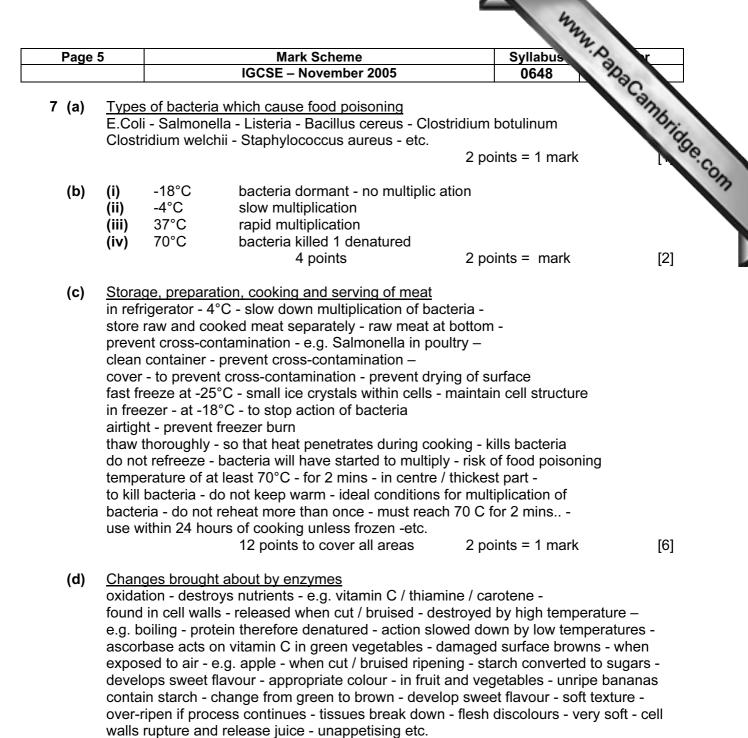
CIE is publishing the mark schemes for the November 2005 question papers for most IGCSE and GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

	Mark Scheme IGCSE – November 2005	Syllabus 0648	×
		0040	2
Section A			amp
	utrients providing energy t - protein - carbohydrate / starch / sugar	Syllabus 0648 3 x 1 point	Tido
fat pro	hergy value of 1 g t 9 kcal or 37 kJ otein 4 kcal or 16 kJ rbohydrate 4 kcal or 16 kJ	3 x 1 point points = 1 mark	[3]
he mo ne cho	ses of energy eat / maintains body temperature ovement / physical work ervous impulses / electrical energy emical processes within cells / growth MR - involuntary processes - breathing, heartbe		
		4 x 1 mark	[4]
en bo	asal Metabolic Rate lergy required - to maintain body processes - ir ody temperature - 5 hours after a meal - differen eartbeat - blood circulation - growth etc. (any 2)	nt for all individuals - breathing ·)	-
	6 points	2 points = 1 mark	[3]
col	nergy intake greater than output nverted to fat - stored - around internal organs If-esteem - breathless - problems during surge sease (CHD)		of
	6 points	2 points = 1 mark	[3]
ag	easons for different energy requirements le - energy required for growth ledy size - greater surface area requires more e ealth - energy may be required to replace dama	aged cells etc. lles	r for
he ge oc	ender - males have a higher BMR than females females may be pregnant or lactating production of milk ccupation - manual workers need more energy tivity - active children or athletes use more energy eather - energy to maintain body temperature in	than sedentary workers ergy	

	2		Mark Scheme	Syllabus	Nr.
		IG	CSE – November 2005	0648	2
2 (a) <u>Sources of iron</u> liver - kidney - red meat green vegetables / name wholemeal bread - curry		ey - red meat etables / nam	ied example - black treacl y powder etc.	e - apricots - cocoa	a Cambridge. [2]
4.)		<i>.</i>	4 points	2 points = 1 mark	[2]
(b)		of haemoglob	oin - red pigment - in blood ses glucose - in cells - pro 6 points	a plotto ap oxygon	[3]
(c)	<u>Deficiency</u> Anaemia	disease	1 mark		[1]
(d)	<u>Symptoms</u> lethargy / l		y - pale complexion - dizzi 2 points	iness / headaches 2 points = 1 mark	[1]
(e)	<u>Absorption</u> Vitamin C	<u>ı of iron</u>	1 mark		[1]
3 (a)		<u>in the duoden</u>			
	surface are pancreatic	ea - neutralise juice - break	es acid from stomach - sto s down proteins into pept	breaks into small droplets - inc ops action of pepsin - trypsin - ides / peptones / polypeptides eatic amylase - converts starch 2 points = 1 mark	from - lipase
(b)	surface are pancreatic - converts maltose <u>Absorption</u> villi - in wa glucose - la	ea - neutralise ; juice - break fats to glycer <u>n in ileum</u> ills of ileum - i acteal - abso	es acid from stomach - sto s down proteins into pept ol - and fatty acid - pancre 10 points m contain blood capillarie	ops action of pepsin - trypsin - ides / peptones / polypeptides eatic amylase - converts starch	from - lipase i to [5] - and
(b) 4 (a)	surface are pancreatic - converts maltose <u>Absorption</u> villi - in wa glucose - la soluble min	ea - neutralise ; juice - break fats to glycer <u>n in ileum</u> ills of ileum - i acteal - abso nerals / vitam <u>e of fresh fruit</u>	es acid from stomach - sto s down proteins into pept ol - and fatty acid - pancro 10 points m contain blood capillarie rbs glycerol and fatty acid nins absorbed- 6 points t and vegetables	ops action of pepsin - trypsin - ides / peptones / polypeptides eatic amylase - converts starch 2 points = 1 mark s - which absorb amino-acids - I - which reform into fats - wate	from - lipase 1 to [5] - and r [3]

Page	3	Mark S	cheme	Sy	llabus A	r
		IGCSE – Nov	/ember 2005	mber 2005 0648		
Sectior	n B					Camb
5 (a)	cheap can b	tance of cereals o - easy to grow - easy to sto e used for sweet and savou 4 poin	ıry dishes - many v nts	varieties - fillin 2 points =		23 Cambridge [2]
(b)	wheat	t - barley - oats - rye - rice - 4 poii		alie meal - mil 2 points =		[2]
(c)	<u>Short</u>	crust pastry method with rea	asons			
	rub in lift har should add ce mix w knead do no form i chill -	ur t into small pieces - fat - with fingertips - nds above bowl d look like breadcrumbs old water - ith round-bladed knife - I lightly - with fingertips t overhandle - nto a firm dough - o relax before baking -	less rubb coolest pa to collect shake bo to avoid r keeps ev to avoid p develops too much hardens f	melting fat erything cool pressing out a gluten - toug water gives	d s fall large pieces to air hens hard pastry	top
		10 points Must	include at least 2	? reasons. 2 points =	= 1 mark	[5]
(d)		<u>temperature for pastry</u> nark 6 or 7 400°C – 425°F 2	200°C – 210°C (mu	st give appro 1 mark	priate C or F)	[1]
(e)	fat me air ex	<u>ges during baking</u> elts - starch granules gelatin pands - separates layers - g nes crisp - browns - dextrini	gluten coagulates -	team produce because it is	s protein -	
		10 pc		2 points =	•	[5]

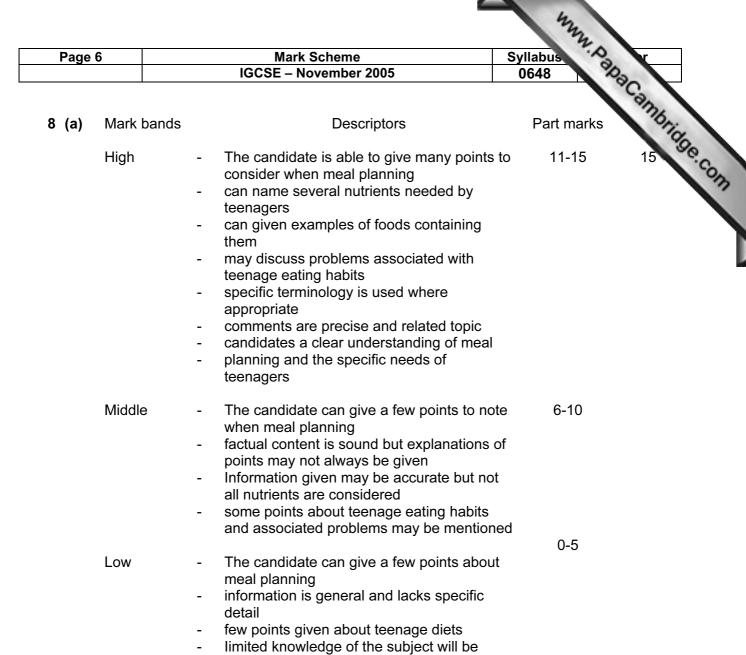
Page 4		Mark Scheme Syllabus		Syllabus	0		
			IGCSE – Novemb	er 2005		0648	Papa Cambridg e - tofu -
6 (a)	<u>Soya</u>						Ser.
0 (aj		vegetable - co	ntains all indispe	nsable amino-a	acids -		76.
			HBV protein - use				10
			alcium - NSP - st	•		D - protein -	0
	HBV			or each 2 nutrie		4	
	gives	variety to diet ·	- soya oil - soy sa	uce - soya flou	ur - soya m	ilk - margarin	e - tofu -
			· ·	or each 2 soya	• •	inaxi i	
			mble meat fibres		-	· · ·	
			our - water added				
			a meat extender				
	•		pasta or rice - to		protein - b	and - takes o	on flavour of
			seasoning / spice urgers, casserole		ourrios in c	onvonionco f	oode o d
		odles etc.		or each 2 exam			0003 e.y.
	1 01 14		10 points		• /	s = 1 mark	[5]
					- p •		[-]
(b)	<u>The us</u>	se of yeast as	<u>a raising agent</u>				
	living	organism - pla	nt - requires warr				•
			duces by budding				
	-	•	or `easy blend' -	•			
			own ! stop action				
	in yea		down of sugar -			-	
	011050	a converta o	uaraaa ta aluaaa		71/100 0 0 0		
			ucrose to glucose		•	•	
	fructos	e to carbon di	ioxide and alcoho	l - more CO2 e	evolved - ca	arbon dioxide	e pushes up
	fructos dough	e to carbon di - expands do	ioxide and alcoho ugh - gluten stret	l - more CO2 e ches to trap ga	evolved - ca is - kneadir	arbon dioxide ng evenly dist	e pushes up tributes
	fructos dough yeast	e to carbon di - expands do n dough - but	ioxide and alcoho	l - more CO2 e ches to trap ga es - proving all	evolved - ca is - kneadir ows more g	arbon dioxide ng evenly dist gas to evolve	e pushes up tributes - dough
	fructos dough yeast regain	e to carbon di - expands do n dough - but s shape - yeas	ioxide and alcoho ugh - gluten streto some gas escapo st killed in hot ove s - used in bread-o	I - more CO2 e ches to trap ga es - proving alle en - sets in rise	evolved - ca is - kneadir ows more g n shape - g	arbon dioxide ng evenly dist gas to evolve gluten in flour	e pushes up tributes - dough
	fructos dough yeast regain	e to carbon di - expands do n dough - but s shape - yeas	ioxide and alcoho ugh - gluten strete some gas escape st killed in hot ove	I - more CO2 e ches to trap ga es - proving alle en - sets in rise	evolved - ca is - kneadir ows more g n shape - g	arbon dioxide ng evenly dist gas to evolve	e pushes up tributes - dough
	fructos dough yeast regain - alcoł	e to carbon di - expands do n dough - but s shape - yeas nol evaporates	ioxide and alcoho ugh - gluten stret some gas escap st killed in hot ove - used in bread-n 10 points	I - more CO2 e ches to trap ga es - proving alle en - sets in rise	evolved - ca is - kneadir ows more g n shape - g	arbon dioxide ng evenly dist gas to evolve gluten in flour	e pushes up tributes - dough - coagulates
(c)	fructos dough yeast regain - alcof	e to carbon di - expands do n dough - but s shape - yeas nol evaporates ent uses of suc	ioxide and alcoho ugh - gluten stret some gas escap st killed in hot ove - used in bread-i 10 points gar	I - more CO2 e ches to trap ga es - proving alle en - sets in rise	evolved - ca is - kneadir ows more g n shape - g	arbon dioxide ng evenly dist gas to evolve gluten in flour	e pushes up tributes - dough - coagulates
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(c)	fructos dough yeast regain - alcoh Differe sweet increa preser improv retains helps develo food fo delays streng retards cake o	e to carbon di - expands do n dough - but s shape - yeas nol evaporates ent uses of suc- ener - drinks, of ses energy va vative - high c e.g. jam (60 ves colour of b caramelises s moisture and fat to incorpora opment of glute cakes and r or yeast - ferm coagulation c in cakes etc thens protein is s enzyme action lecorations - n	ioxide and alcoho ugh - gluten strete some gas escape st killed in hot ove - used in bread- 10 points aar cakes sauces lue of foods - bev concentration of s 0% added sugar) aked products - o s sugar in dry hea l prevents baked ate air - creamed en and gives mor rich pastries entation of bread of protein in eggs c. in beaten egg wh on - frozen foods narzipan, glace io	I - more CO2 e ches to trap ga es - proving alle en - sets in rise making etc. verages etc. ugar prevents g cakes with brow it of oven products drying cake mixtures e crumbly resu dough and gluten - m ite - helps to re ing, butter icing	evolved - ca is - kneadir ows more g 2 points 2 points growth of n vn sugar, g - rich cak prevents lt - ore time fo etain air - m	arbon dioxide ng evenly dist gas to evolve gluten in flour s = 1 mark nicro-organisi es	e pushes up tributes - dough - coagulates [5] ms
(c)	fructos dough yeast regain - alcoh <u>Differe</u> sweet increa preser improv retains helps develo food fo delays streng retards cake o sugar	e to carbon di - expands do n dough - but s shape - yeas nol evaporates ent uses of suc- ener - drinks, of ses energy va vative - high c e.g. jam (60 ves colour of b caramelises s moisture and fat to incorpora opment of glute cakes and r or yeast - ferm coagulation c in cakes etc thens protein is s enzyme action lecorations - n and water glaz	ioxide and alcoho ugh - gluten strete some gas escape st killed in hot over - used in bread- 10 points aar cakes sauces lue of foods - bew concentration of s 0% added sugar) aked products - of s sugar in dry hea l prevents baked ate air - creamed en and gives mor rich pastries entation of bread of protein in eggs c. in beaten egg wh on - frozen foods narzipan, glace io ze - sticky layer o	I - more CO2 e ches to trap ga es - proving alle en - sets in rise making etc. yerages etc. ugar prevents g cakes with brow to f oven products drying cake mixtures e crumbly resu dough and gluten - m ite - helps to re ing, butter icing n yeast buns	evolved - ca is - kneadir ows more g 2 points 2 points growth of n vn sugar, g - rich cak prevents lt - ore time fo etain air - m g etc.	arbon dioxide ng evenly dist gas to evolve gluten in flour s = 1 mark nicro-organisi es r gases to ex neringues	e pushes up tributes - dough - coagulates [5] ms
(c)	fructos dough yeast regain - alcoh <u>Differe</u> sweete increa preser improv retains helps develo food fo delays streng retards cake o sugar can m	e to carbon di - expands do n dough - but s shape - yeas nol evaporates ent uses of suc- ener - drinks, of ses energy va vative - high of e.g. jam (60 ves colour of b caramelises s moisture and fat to incorpora opment of glute cakes and r or yeast - ferm o coagulation of in cakes etc thens protein is s enzyme action and water glaz ake caramel -	ioxide and alcoho ugh - gluten strete some gas escape st killed in hot ove - used in bread- 10 points aar cakes sauces lue of foods - bev concentration of s 0% added sugar) aked products - o s sugar in dry hea l prevents baked ate air - creamed en and gives mor rich pastries entation of bread of protein in eggs c. in beaten egg wh on - frozen foods narzipan, glace io	I - more CO2 e ches to trap ga es - proving alle en - sets in rise making etc. ugar prevents g cakes with brow to f oven products drying cake mixtures e crumbly resu dough and gluten - m ite - helps to re ing, butter icing n yeast buns eme caramel, c	evolved - ca is - kneadir ows more g 2 points 2 points growth of n vn sugar, g - rich cak prevents lt - ore time fo etain air - m g etc.	arbon dioxide ng evenly dist gas to evolve gluten in flour s = 1 mark nicro-organisi es r gases to ex neringues	e pushes up tributes - dough - coagulates [5] ms
(c)	fructos dough yeast regain - alcoh <u>Differe</u> sweete increa preser improv retains helps develo food fo delays streng retards cake o sugar can m	e to carbon di - expands do n dough - but s shape - yeas nol evaporates ent uses of suc- ener - drinks, of ses energy va vative - high of e.g. jam (60 ves colour of b caramelises s moisture and fat to incorpora opment of glute cakes and r or yeast - ferm o coagulation of in cakes etc thens protein is s enzyme action and water glaz ake caramel -	ioxide and alcoho ugh - gluten strete some gas escape st killed in hot over - used in bread-1 10 points <u>gar</u> cakes sauces lue of foods - bew concentration of s 0% added sugar) aked products - of s sugar in dry hea l prevents baked ate air - creamed en and gives mor- rich pastries entation of bread of protein in eggs c. in beaten egg wh on - frozen foods harzipan, glace io ze - sticky layer of desserts e.g cre e, sweets, fudge	I - more CO2 e ches to trap ga es - proving alle en - sets in rise making etc. ugar prevents g cakes with brow to f oven products drying cake mixtures e crumbly resu dough and gluten - m ite - helps to re ing, butter icing n yeast buns eme caramel, c	evolved - ca is - kneadir ows more g n shape - g 2 points growth of n vn sugar, g - rich cak prevents lt - ore time fo etain air - m g etc. creme brule	arbon dioxide ng evenly dist gas to evolve gluten in flour s = 1 mark nicro-organisi es r gases to ex neringues	e pushes up tributes - dough - coagulates [5] ms



12 points

2 points = 1 mark [6]

[Section B Total: 45 marks]

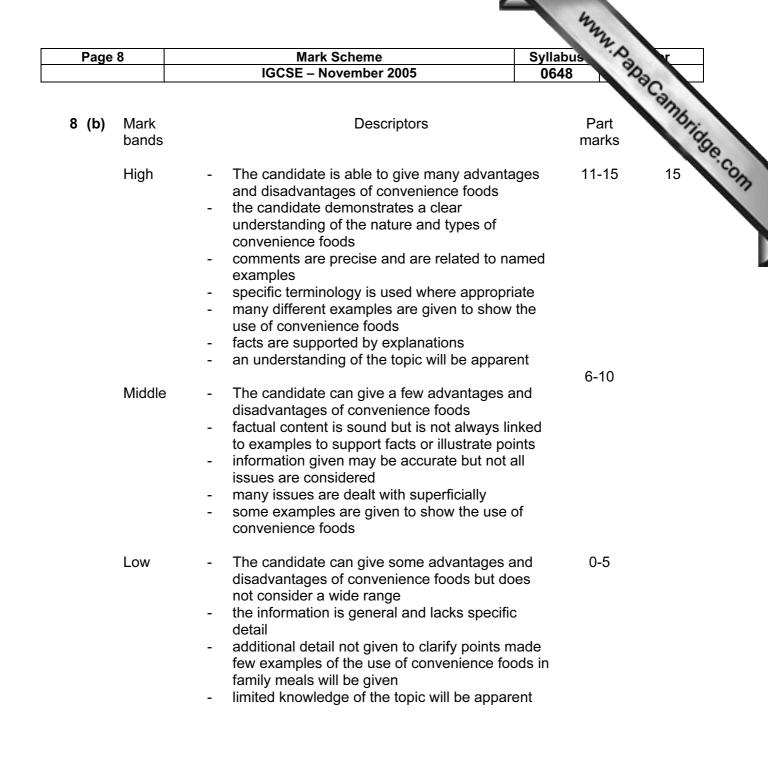


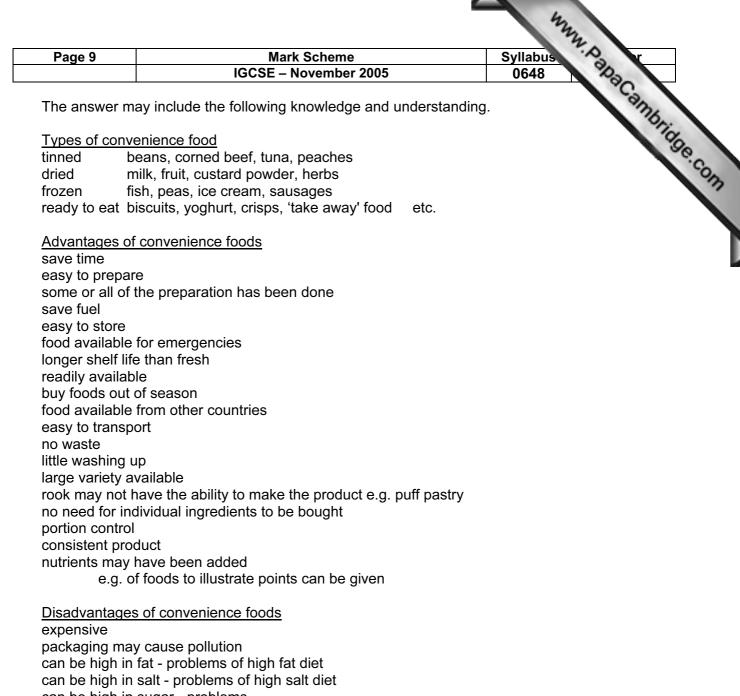
apparent

Page 7	Mark Scheme IGCSE – November 2005		Syllabus r				
			2005	0648			
The answer may	include the follow	ving knowledge	and understanding	Syllabus 0648			
Points when plar	nning meals			19	5		
variety of colour		- use of vegetables, different colours in each course					
variety of flavour		 avoid rej 	- avoid repetition of flavour in courses				
variety of texture	;	- not too s	oft, crispy etc not	2 pastry courses			
cost		- consider	consider budget - use cheap cuts of meat, foods in				
		season e	etc.				
time available		 tough cuts of meat need long, slow cooking may need 					
			to consider convenience foods				
equipment availa			 microwaves, steamers, electric mixer etc. 				
availability of foo	bd		season, proximity of shops, transport				
skill of cook			should choose only dishes competent to cook				
occasion			party, packed meal, celebration, Christmas etc.				
season			hot food in cold weather etc.				
courses should b	be in same plane		do not follow an elaborate first course with a pot of				
		yoghurt					
time of day			breakfast will be different from lunch				
health of family			consider light meals for convalescents etc,				
special diets		- vegetaria	an, low fat etc.				
Special needs of	f teenagers						
HBV protein	growth spurt		meat, fish, cheese	e, milk, eggs			
iron	menstruation		red meat, egg, live				
increases volum		مم مد اما مما	arean vagatables	unining of a			

HBV protein	growth spurt	meat, fish, cheese, milk, eggs
iron	menstruation	red meat, egg, liver, cocoa
	increases volume of blood	green vegetables, raisins etc.
vitamin C	absorption of iron	citrus fruit, blackcurrant, kiwi,
		tomatoes, green vegetables etc.
calcium	bone growth	milk, cheese, green vegetables
		white bread, canned fish bones
vitamin D	absorption of calcium	cheese, margarine, oily fish etc.
starch / fat	energy	cereals, potatoes milk, margarine etc

not too much fat difficult to digest - obesity - if in excess of needs saturated fat from animals - e.g. butter, red meat (1 example) associated with cholesterol - deposited in arteries - narrows - blocks – coronary heart disease (CHD) - hypertension - strokes problems later in life - peer pressure tend to consume junk food - high in fat - sugar - diabetes - tooth decay - salt hypertension - should avoid snacking - unless on fruit -

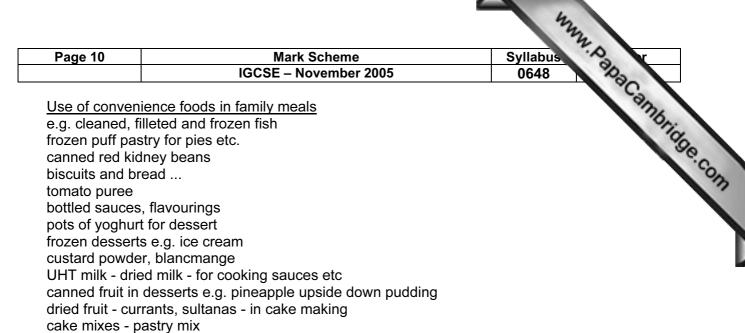




can be high in sugar - problems can be low in NSP - highly refined - problems of low NSP diet

contain additives - types of additives - e.g. artificial colourings and flavourings allergies - hyperactivity - long term effects not known small portions loss of vitamins B and C

loss of skills



dried herbs - stock cubes etc.

Uses in family meals should be expected from named examples of convenience foods.

A list of convenience foods in not acceptable since the question asks how they can be incorporated into family meals.