Cambridge International A Level

Cambridge Assessment International Education
Cambridge International Advanced Level

FOOD STUDIES **9336/01**

Paper 1 Theory **October/November 2018**

MARK SCHEME

Maximum Mark: 100

Published

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began, which would have considered the acceptability of alternative answers.

Mark schemes should be read in conjunction with the question paper and the Principal Examiner Report for Teachers.

Cambridge International will not enter into discussions about these mark schemes.

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Generic Marking Principles

These general marking principles must be applied by all examiners when marking candidate answers. They should be applied alongside the specific content of the mark scheme or generic level descriptors for a question. Each question paper and mark scheme will also comply with these marking principles.

GENERIC MARKING PRINCIPLE 1:

Marks must be awarded in line with:

- the specific content of the mark scheme or the generic level descriptors for the question
- the specific skills defined in the mark scheme or in the generic level descriptors for the question
- the standard of response required by a candidate as exemplified by the standardisation scripts.

GENERIC MARKING PRINCIPLE 2:

Marks awarded are always **whole marks** (not half marks, or other fractions).

GENERIC MARKING PRINCIPLE 3:

Marks must be awarded **positively**:

- marks are awarded for correct/valid answers, as defined in the mark scheme. However, credit is given for valid answers which go beyond the scope of the syllabus and mark scheme, referring to your Team Leader as appropriate
- marks are awarded when candidates clearly demonstrate what they know and can do
- marks are not deducted for errors
- marks are not deducted for omissions
- answers should only be judged on the quality of spelling, punctuation and grammar when these features are specifically assessed by the question as indicated by the mark scheme. The meaning, however, should be unambiguous.

GENERIC MARKING PRINCIPLE 4:

Rules must be applied consistently e.g. in situations where candidates have not followed instructions or in the application of generic level descriptors.

GENERIC MARKING PRINCIPLE 5:

Marks should be awarded using the full range of marks defined in the mark scheme for the question (however; the use of the full mark range may be limited according to the quality of the candidate responses seen).

GENERIC MARKING PRINCIPLE 6:

Marks awarded are based solely on the requirements as defined in the mark scheme. Marks should not be awarded with grade thresholds or grade descriptors in mind.

Question	Answer	Marks
1(a)(i)	pepsin breaks down protein into peptides – in the stomach; rennin clots milk – in the stomach; trypsinogen – formed in the pancreas; mixes with enterokinase – in the duodenum; to form trypsin – to break down peptides to peptone / dipeptides / tripeptides; erepsin – in the ileum – breaks down peptones to amino acids;	**6**
1(a)(ii)	apples / avocado / bananas / potatoes / peaches / pears contain phenols – that are released when cells are damaged / cut; the phenols act as a substrate to the enzyme phenolase that is also present; the phenolase turns the phenols into a new product – called melanin – that is brown in colour; the reaction takes place in the presence of oxygen – when the pH is between 5.0 and 7;	**3**
1(a)(iii)	(rennet / chymosin from) rennin – is used to clot the proteins in milk; catalase is used in Swiss cheese production to preserve natural flavours; lipases break down milk fats – used to produce Italian Romano cheese;	**1**
1(a)(iv)	hydrolytic rancidity – occurs in fats and oils that have not been heat treated – and may contain lipases – that catalyse the hydrolysis of triglycerides – to fatty acids and glycerol – in the presence of water – resulting in an 'off' flavour and smell;	**3**
1(b)	water taken into the body equals water lost; the kidneys maintain water balance in our blood stream by making urine of different concentrations; when the concentration of water in our blood stream is low the kidneys allow more water to be absorbed into the bloodstream; when the water concentration in our bloodstream is high the kidneys remove water from our bloodstream; these actions alter the concentration of urine; the body takes water in from drinks, food and respiration; the body loses water through sweating and urinating;	**3**
1(c)(i)	cabbage / kale / spring greens / collard greens – watercress – spinach – black eyed peas – bok choy / pak choy – dried figs – sardines / pilchards – canned salmon – white beans – okra – tofu – soya beans – bread / fortified flour – almonds – sesame seeds – crabs / lobsters – blackcurrants – apricots – walnuts – chia seeds;	**2**

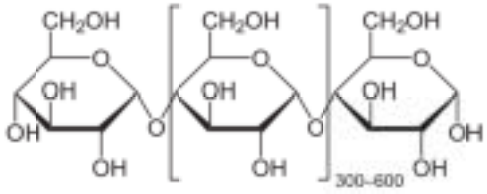
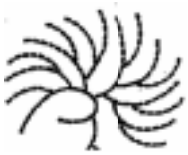
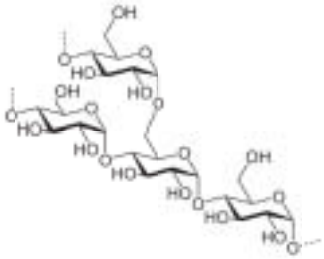
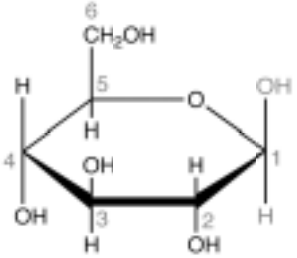
Question	Answer	Marks
1(c)(ii)	oxalates in rhubarb and spinach – form insoluble calcium oxalate; phytates in wholegrains – bind to calcium impeding its bioavailability; low levels of parathyroid hormone – results in poor metabolism of vitamin D to stimulate calcium absorption; vitamin D deficiency – will prevent the calcium – protein complex formation necessary for calcium absorption; kidney disease – will prevent the activation of vitamin D;	**3**
1(c)(iii)	*groups of people:* vegans – women wearing a hijab / niqab / burka – the elderly / infirm / housebound – night shift workers / people living in Polar regions / Northern hemisphere / winter months; *symptoms:* rickets – curvature of the bones in children; osteomalacia – loss of calcium in the bones in adults; hypocalcaemia – bruising / pins and needles; tetany – muscle contractions / seizure; hyperparathyroidism – fragile bones / kidney stones / abdominal pain / joint pain; myopathy – muscle weakness / pain / exercise intolerance; depression – difficulty concentrating / feelings of worthlessness / hopelessness;	**4**

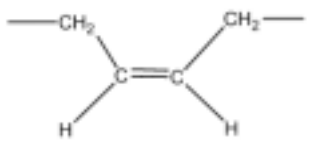
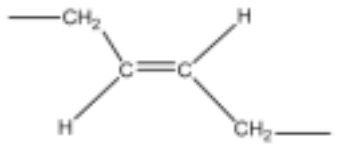
Question	Answer	Marks
2(a)	vitamin A – production of visual purple / rhodopsin; vitamin D – formation of bones and teeth; HBV protein – growth / repair; calcium – muscle contractions – clotting – bone and teeth formation; vitamin B12 – formation of erythrocytes; iron – formation of erythrocytes / haemoglobin; phosphorous – constituent of nucleic acids – formation of bones and teeth; iodine – synthesis of thyroxine; (magnesium, potassium, vitamin E, vitamin K, vitamin B1,vitamin B2, vitamin B3, sodium, zinc, copper, manganese, selenium, folate are also present in less significant quantities) AVP	**6**
2(b)(i)	vitamin A / retinol; vitamin D / cholecalciferol; vitamin E / tocopherol; fat soluble – can be stored by body / stored in liver – possibility of a build up / retention of too much – if diet rich in offal / oily fish liver / vegetable oils;	**3**
2(b)(ii)	babies – underdeveloped organs unable to cope with excess of all fat soluble vitamins – cause liver / organ damage; people with low vitamin K / bleeding disorders / haemophiliacs – excess vitamin E may increase bleeding / haemorrhaging / stroke; people with kidney disease – excess vitamin D can increase blood calcium levels / cause kidney stones; pregnant women – excess vitamin D / vitamin A can cause harm to foetus / birth defects; people with liver damage / alcoholics – excess vitamin A can cause increased liver damage; post-menopausal women – excess vitamin A can lead to increased bone fragility;	**3**
2(c)	likely to have reached menopause at this age – and will have stopped menstruating; before menopause would have lost significant amounts of iron when menstruating – more iron was required on a daily basis to avoid anaemia;	**2**
2(d)	vitamin C aids iron absorption – by converting iron from ferric Fe^{3+} to ferrous form Fe^{2+}; vitamin C is essential for preventing iron-deficiency anaemia – people with iron-deficiency anaemia may be consuming enough iron but lack vitamin C in their diet;	**2**

Question	Answer	Marks
2(e)	*vitamin C:* quickly and easily destroyed – prepare foods just before eating – tear cabbage instead of cutting – to avoid damage to cells – avoid exposure to light – destroyed by dry and moist heat – dissolves in cooking water – in storage, is oxidised – when exposed to air – oxidation is accelerated by heat – and exposure to metal ions like copper – becomes unavailable to the body – alkali / bicarbonate of soda – causes oxidation – oxidation reduced by storage in a weak acid – and storage at low temperatures;	**5**
2(f)	reduce intake of saturated fat – to prevent CHD / obesity; drink more water – to keep the body hydrated / lubricated / maintain cell concentration / AVP; eat more fruit and vegetables – for hydration / NSP / provide water soluble vitamins; eat more NSP – to provide bulk to faeces / aid peristalsis; eat oily fish at least once a week – to provide vitamin D / omega fatty acids; reduce sugar intake – to reduce calorie intake / prevent type II diabetes / prevent dental caries; reduce salt intake – to prevent hypertension; eat a large breakfast, moderate lunch and small evening meal – to enable energy from calories to be used up over the day / to avoid too many calories being eaten before a period of inactivity / rest; avoid snacking / grazing between meals – to maintain energy balance / avoid eating too many calories;	**4**

Question	Answer	Marks
3(a)	BMR basal metabolic rate varies between people – BMR is the amount of energy required by the body when at rest; state of health – the bed ridden have a lower BMR due to low mobility; state of health – people recovering from an illness or accident have a higher BMR due to repair and renewal; activity level – BMR higher in athletes from massive energy use on sport; activity of the thyroid gland – underactive thyroid results in a lower BMR; activity of the thyroid gland – overactive thyroid results in a higher BMR; pregnancy – increase in BMR due to growth of foetus; lactation – increase in BMR due to milk production; climate – increase in BMR due to needing more energy in cold climate to maintain body temperature; thermogenic effect of food – BMR increases as intake of food stimulates metabolism / metabolic rate increases after a meal / meal produces extra energy in form of heat; personality – BMR lower in calm / placid individuals than nervous / aggressive; muscle mass – muscle burns more calories than fat;	**6**

Question	Answer	Marks
3(b)	eat ready meals as parent does not cook; increase in use of ready meals – high fat and sugar; increase in consumption of junk food – high in saturates – not filling – eat more; children like the sweet flavour of sucrose – it is addictive – leads to overeating – high in calories – empty calories; availability of snacks – in vending machines – in accessible places like bus stations / train stations; advertising; celebrity endorsement – e.g. Walkers crisps; low cost of fast foods; impulse buys / product placement e.g. hot dogs in IKEA; Krispy Cremes in service stations; bargains / deals on snack foods / bog off deals; new trends in entertainment amongst the young – catch a movie, eat popcorn then go for a pizza; poor portion control; lack of exercise – due to poor habits / T.V. / computer games / not playing outside; AVP	**4**
3(c)	lipogenesis is the synthesis of triglycerides – in the liver and the adipose tissue – from simple sugars like glucose; it is the body's way of storing energy from carbohydrates as fat – in adipose tissue – for slow release at a later time; the starting point for the synthesis is Acetyl-CoA – which is built onto by two carbons – in the cytoplasm of the liver / adipose tissue cells;	**3**

Question	Answer	Marks
3(d)	amylose is part of the starch molecule – its structure is linear – and coiled into a helix – and made up of 1,4 linked alpha glucose units – joined by glycosidic bonds – in a condensation reaction; amylopectin is made up of 1,4 linked alpha glucose units and 1,6 alpha glucose units – creating a branched and not coiled molecule; amylose:  or  amylopectin:  or 	**4**
3(e)	*maltose* – glucose; maltase; *sucrose* – glucose; fructose; sucrose; *lactose* – glucose; galactose; lactase;	**3**
3(f)	raffinose; stachyose; verbascose; promote the growth of 'good' / 'friendly' bacteria in the intestine; suppress the growth of *clostridium perfringens* bacteria; act as dietary fibre and soften stools;	**3**
3(g)	cellulose – is made up of many β-glucose molecules connected together at carbon atoms 1 and 4 along the polymer chain; cellulose molecule is long chains of β-glucose molecules lying in parallel connected by hydrogen bonds; 	**2**

Question	Answer	Marks
4(a)	 *cis*  *trans*	**2**
4(b)(i)	there is no chemical breakdown of lipids until the duodenum; in the duodenum, bile; secreted from the gall bladder; emulsifies fats into small droplets; to increase the surface area; pancreatic lipase; secreted from the pancreas; breaks down fats into soluble glycerol; and insoluble fatty acids; the fatty acids become soluble after reacting with the bile; this breakdown by lipase continues in the ileum;	**6**
4(b)(ii)	in the small intestine – fatty acids and glycerol – pass into the lacteal – in the villi – to be reformed into triglycerides – and absorbed into the bloodstream – as insoluble fat molecules – in the form of a phospholipid / chylomicron;	**3**
4(c)	formation of cell membranes – forms a lipid bilayer – particularly in the brain – to form a barrier / impermeable membrane; provides vitamins A, D, E and K – as these are fat soluble / found in fatty foods / meat / fish / avocados / butter / cheese; concentrated source of energy – supplies more energy than the same mass of carbohydrates or protein; hormone synthesis – cholesterol required to form all hormones, particularly steroid hormones; protects vital organs – forms a layer of adipose tissue around the kidneys / organs that are not protected by the rib cage / to provide cushioning from blows / falls; feeling of fullness – fat digestion is slow / does not begin until the duodenum; produces sebum – to moisturise skin / hair;	**5**
4(d)	crisps – cooked meat – raw poultry – raw pork – cheese – AVP; the removal of oxygen from the mixture of gases – helps to extend the shelf life of the food – as microorganisms are unable to reproduce; the quality of the food is maintained – as oxidative rancidity does not occur – therefore preventing browning / off flavour through oxidation;	**4**

Question	Answer	Marks
4(e)	too much sugar has a negative effect on dental health – and the frequency with which sugar is eaten plays a role in tooth decay – as sugar is absorbed into plaque – on the surface of the teeth and gums – and is digested by bacteria in the plaque – and turned into acid – lowering the pH of the mouth – to below pH 5.5 – causing tooth enamel to dissolve – leaving a weakened tooth – that is further attacked by acid – until a cavity appears in the tooth / dentine – allowing the nerve to be exposed to decay – infection / abscess to form – resulting in the removal of the tooth;	**5**

Question	Answer	Marks
5(a)	stem – celery / rhubarb; leaf – spinach / cabbage / lettuce / chicory; flower – cauliflower / broccoli; root – beetroot / radish / turnip / celeriac; seed / pod – peas / broad bean / kidney beans / nuts; fruit – tomato / cucumber / pepper / cherry / plum; bulb – onion / leek / shallot; tuber – potato / yam / Jerusalem artichoke;	**4**
5(b)(i)	food that provides enhanced benefits to the body in addition to its basic nutritional value;	**1**
5(b)(ii)	because stanols and sterols are very similar to cholesterol – they compete with cholesterol to be absorbed into the bloodstream – this helps to lower LDL cholesterol – without lowering HDL cholesterol – which in turn reduces CHD;	**2**
5(b)(iii)	probiotic *lactobacilli* – and *bifido* bacteria; have a protective shield – that allows them to survive stomach acid and bile salts; they are therefore able to travel to the small intestine – where they add to the flora of bacteria needed to regulate the immune response – and degrade food / maintain health; probiotic bacteria are also thought to dislodge pathogenic *helicobacterpylori* – that burrow into the stomach lining and cause ulcers;	**2**

Question	Answer	Marks
5(c)	fair trade products allow farmers / growers in developing countries to receive a fair price for their work from companies in developed countries; this in turn allows people in developing countries to afford essentials like food / education / healthcare; payments are made in advance to ensure the farmer / grower can fulfil orders; there is a certainty of safe working conditions; the consumer is benefitting workers who are trying to improve their lives; knowledge that women and children who are often marginalised are being given fair pay / conditions; sense of good ethics / morally correct; knowledge that the environment and biodiversity is being considered; certainty of good quality product;	**3**
5(d)	plant cells undergo autolysis – as they ingest themselves with their own enzymes; also known as enzymic spoilage – certain enzymes in food bring about the decomposition of the food; raw tomato after / during autolysis would look shrivelled / shrunken – the skin would break open and look discoloured – moulds would enter through the broken skin;	**3**
5(e)	formation of ice crystals – particularly large crystals in slow freezing – because the whole apple is large / dense – would damage the fruit cells – causing rupture of cell when defrosting – resulting in collapse of the fruit – mushy / liquidy;	**2**

Question	Answer	Marks
5(f)	*Arguments for:* greater yield – increased population needs increased food production; insect resistant and / or herbicide tolerant crops – useful in climates with insect / locust problems; also fungal and virus resistant crops; salt, cold or drought tolerance – for dry / arid countries; crops with increased nutritional value – valuable for people with malnourishment; fewer resources used – more environmentally friendly to not apply herbicide / pesticide / fertiliser; decreases the severity and frequency of chemical pollution; genetically engineered chymosin – from fungus – used to make cheese can save the need to raise and slaughter calves – that are expensive to feed and take up land that could be used for crops; more effective way of producing animal feed – to feed animals cheaply – using less grazing land – and producing meat more cheaply for those who have low incomes; *Arguments against:* safety concern relates to the human health implications of eating genetically modified food; whether naturally occurring toxins would increase in the plant; whether new toxins would develop in the plant; whether a new allergen could develop in the plant; whether levels of nutrients would be affected; concerns over gene flow into related crops / weeds from the inability to contain pollen movement – development of superweeds; or unknown effects on beneficial organisms – which may impact on biodiversity by the removal of all weeds in the normal arable rotation – upon which insects and birds thrive; ethical concerns involve religious issues – playing God; corporate control of the food supply – the issues surrounding intellectual property rights; concerns over the level of labelling needed on genetically modified products; erroneous / ambiguous safety testing of GM crops whereby a crop is deemed to be safe if it is 'substantially equivalent' to its non GM counterpart crop; starving people in developing countries are denied access to food because of complex political, social and economic factors which deny them land and money – it is not because food is unavailable in their country but it is because food is made unavailable to those particular groups of people in their society;	**8**

Question	Answer	Marks
6(a)	rubbing-in – sieving – creaming – beating – folding and rolling;	**2**

Question	Answer	Marks
6(b)	eggs coagulate – mixture hardens / sets; (starch in flour) dextrinises – surfaces of cake go brown / crispy; starch gelatinises – thickens mixture; air / gas expands – mixture is forced upwards and outwards to form shape of tin; liquid evaporates into steam – provides further gas for expansion; Maillard browning occurs – due to reaction between proteins in eggs and flour and carbohydrates in sugar and flour;	**3**
6(c)	balloon whisk – rotary hand whisk – flat whisk – coil whisk – electric hand mixer; for all whisks – check that there are no loose parts that can fall into the mixture; keep fingers away from beater blades when in use; wash / fit blades with care; for rotary whisk – long hair or jewellery can become trapped in the gears; for electric whisk – read the instruction manual; receive training in the use of the whisk; plug in the machine with dry hands; check that the flex is not worn / frayed / exposed; ensure the unit is PAT tested annually; do not wash the electrical unit;	**4**
6(d)	choux pastry / éclairs / profiteroles; Yorkshire pudding / toad-in-the-hole; soufflé; flaky pastry; other mixtures that contain a large volume of liquid; the water content needs to heat up and boil quickly to provide the risen structure;	**3**
6(e)	may forget to ignite gas oven and cause gas leak; may not recognise the smell of leaking gas; may have to ignite gas oven by striking a match; may strike match after gas has been leaking for some time; may forget to turn gas oven off; conventional ovens become very hot and can severely burn the skin; may try to reposition shelving whilst oven is hot causing shelf to get stuck / burn hands; conventional ovens remain hot even after removing the heat source; microwave ovens do not get as hot / don't retain heat so there is less risk of burning oneself; suitable plastics do not get hot; the microwave does not work when the door is open as there is a safety mechanism; the microwave is off as soon as the door is opened;	**5**

Question	Answer	Marks
6(f)(i)	radiation;	**1**
6(f)(ii)	*comparisons* both steaks will contain saturated fat – HBV protein – selenium – zinc – iron – phosphorous – vitamin B1 – vitamin B2 – vitamin B3 – vitamin B12 – folate – vitamin D; both steaks will shrink during cooking and look smaller than when raw; both steaks will develop a sweet, meaty smell due to the presence of extractives; *contrasts* grilled beef steak – will lose some saturated fats as it melts and drips away as oil into the grill pan – calorie content will be reduced; will develop a crispy surface texture; may be hard to chew / bite; fat / rind will crisp up; will look dark brown; will have a dry appearance; will retain fat soluble vitamins and some water soluble vitamins; braised beef steak – will retain more of its saturated fat though some will melt into the liquor; will have a softer / more tender texture; fat / rind will remain white looking and soft; will look light brown / grey; will have a moist appearance; will retain fat soluble vitamins but lose most water soluble vitamins into the liquor;	**7**

Question	Answer	Marks
7(a)	humectant – to keep ingredients moist and free flowing; anti caking agents are humectants; used in vending machine powders to prevent them caking together and not flowing; antifoaming agent – to prevent liquids from frothing / foaming and causing blockages in pipes / funnels; aids the flow of liquid ingredients; bulking agent – starch added to a food to increase its size / bulk / replace fats, without affecting the overall taste; for example, modified starch used to replace fat in reduced fat chorizo sausage; flour improver – added to flour to improve its colour; or ascorbic acid to improve the size of a loaf of bread and reduce proving time; dessicant – to maintain a dehydrated state; in powders / dried ingredients / dried onions / dried mushrooms; thickener – to increase the viscosity of a product, e.g yoghurt; stabiliser – used to stabilise an emulsion; thickeners or gelling agents like agar or pectin used to give a firmer texture; propellant – to help expel pressurised food from its container;	**6**

Question	Answer	Marks
7(b)	*allergy* – allergic response – immune system reacts to the allergen – histamine released – results in swelling – rapid onset of symptoms – may result in anaphylaxis; *intolerance* – lack the enzyme / unable to digest the nutrient – gluten / lactose / other proteins – slower onset of symptoms of stomach ache / flatulence / poor nutrient absorption – may be able to tolerate the food occasionally;	**4**
7(c)	any meat or animal products listed as an ingredient – not eaten by vegetarians who may be Buddhists / Rastafarians / Hindus; pork listed as an ingredient – not eaten by Muslims; pork listed as an ingredient – not eaten by Jews; gelatine listed as an ingredient – not eaten by vegetarians who may be Buddhist / Rastafarian / Hindus / Muslims; beef listed as an ingredient is not eaten by Hindus; shellfish / crab / lobster / prawns listed as an ingredient – not eaten by Jews; alcohol listed as an ingredient – not allowed by Muslims / Buddhists; halal special claim – that meat is prepared in a specific way for Muslims; kosher special claim that meat is prepared in a specific way for Jews; GM free special claim – many religions / Christians believe that genetics should not be tampered with; AVP	**3**

Question	Answer	Marks
7(d)	*comparisons* all hygiene regimes aim to eliminate / reduce biological presence / growth; all hygiene regimes aim to eliminate / reduce contamination by chemicals; all hygiene regimes aim to eliminate / reduce contamination by physical contaminants; all hygiene regimes use hot water / cleaning fluids / soaps / disinfectants; *contrasts* *food hygiene:* involves washing of fruits / veg etc. – to remove dirt / flies / bacteria; use of correct coloured chopping board – to prevent cross contamination of bacteria; *kitchen hygiene*: involves cleaning of equipment / surfaces / fridges etc. – to remove / reduce dirt; emptying of bins / bins with lids – to reduce flies; disposing of high risk packaging / raw meat packaging immediately – to prevent cross contamination; regular cleaning of cloths – to prevent build up of bacteria; safe storage of cleaning fluids – to prevent contamination by chemicals; *personal hygiene*: regular and thorough hand washing – to prevent cross contamination of bacteria; clean apron / overall – to reduce bacterial contamination from clothing; use of hair net – to prevent physical contamination; no illness at work – to prevent spread of bacteria; open wound / cuts to be covered with a clean disposable glove / blue plaster – to prevent contamination by staphylococcus aureus; short fingernails – to prevent dirt collecting under nails; no nail varnish – to prevent chips of varnish getting into food; removal of jewellery – to prevent physical contamination;	**7**
7(e)(i)	*Staphylococcus aureus*; these bacteria live on human skin and would have colonised in the man's wounds; bacteria were able to cross contaminate as wounds were left uncovered;	**2**
7(e)(ii)	cross contamination of bacteria from the chef's hands – to the chicken salad may have occurred after the cooking period – as the chef served foods out of the serving counter; bacteria would have had time to reproduce in the four hours from cooking to sale; numbers of bacteria would have doubled every 20 minutes whilst kept in an unrefrigerated environment; the cooking process may not have destroyed the toxins produced by the bacteria and may be responsible for the food poisoning;	**2**
7(e)(iii)	the outcome could have been the same because these bacteria can reproduce in temperatures below 5 °C; OR the outcome would have been better because the reproduction of the bacteria would have been slower as the temperature would have been less than 5 °C / out of the danger zone;	**1**

Question	Answer	Marks
8(a)(i)	*bechamel* flour – starch in flour gelatinises to thicken sauce; fat – melts when heated and forms a roux with the flour; milk / liquid stock – volume of liquid for sauce – is absorbed by starch – allows flour to be held in suspension before heating; *egg custard* milk – volume of liquid for sauce; egg – coagulates to thicken liquid; sugar / vanilla essence – flavour; *mayonnaise* oil – forms an emulsion with vinegar or lemon juice – when shaken / mixed oil droplets are dispersed in the vinegar / lemon juice; vinegar / lemon juice – forms an emulsion with the oil – when shaken / mixed droplets of vinegar / lemon juice are dispersed in the oil; egg yolk – contains lecithin to stabilise the emulsion; seasoning / salt / pepper / mustard / sugar – flavour;	**6**
8(a)(ii)	velouté sauce / soup is a roux thickened sauce enriched with egg yolk, butter and / or cream; espagnole is a roux thickened sauce that is brown / beefy and seasoned with herbs;	**2**
8(b)	appear more bulky / fluffy – due to starch absorbing liquid; feel softer and easier to chew / mash – due to cellulose structure being damaged; taste sweeter / less bitter – due to starch being broken down into monosaccharides smell sweeter – due to sugar content from breakdown of starch;	**3**
8(c)	*potatoes*: in darkness – to prevent chitting and turning green; in a cool place / 6–12 °C – to discourage growth of microorganisms; in a ventilated place – to discourage growth of mould; in controlled humidity / not dry air / not very moist air – to prevent wilting / mould growth; *rice*: in a dry canister / dry cupboard – to prevent getting damp and encouraging mould growth; in a sealed / lidded canister / box – to prevent entry of weavils;	**4**

Question	Answer	Marks
8(d)	This question was discounted.	
8(e)	turn off gas / electricity – to remove heat from fire triangle / remove heat source; cover the fire with the lid / baking tray / damp towel – to prevent oxygen from reaching the flames; cover with a fire blanket – to eliminate oxygen; use a kitchen fire extinguisher; do not put water on the fire – the water will instantly boil and spit out onto your skin; do not try to move the pan for several hours as it retains heat;	**2**
8(f)	radish / tomato water lilies / slices – on salad; lemon wedges – on fish goujons; twisted lemon slice – on paté; cress sprinkled – on sandwiches; stuffed eggs – on a bed of lettuce leaves; sprigs of curly parsley – on chicken drumsticks; bunch of grapes – on cheese board; AVP	**3**