
FOOD STUDIES

9336/01

Paper 1 Theory

October/November 2017

MARK SCHEME

Maximum Mark: 100

Published

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| Question | Answer | Marks |
|----------|--|-------|
| 1(a) | <p>amino acids are small units of protein – that join to make a protein molecule; 22 natural amino acids – 9 are indispensable / EAA; they must be obtained from food – as they cannot be synthesised in the body; 10 EAAs for children – 8 EAAs for adults;</p> <p>histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, valine;</p> | 4 |
| 1(b) | <p><i>amino acid</i> made up of carbon, oxygen, nitrogen, hydrogen; amino group / base group – NH₂; carboxyl group / acid group – COOH; general formula NH₂CHR₁COOH; suitable correct diagram;</p> <p><i>primary protein</i> amino acids joined in a polypeptide chain – by peptide links; chains have a zigzag / flexible – structure with R groups protruding alternately in opposite directions; suitable correct diagram;</p> | 6 |
| 1(c)(i) | <p>amino acids are absorbed through the capillary walls into the bloodstream; a supply of amino acids is pooled in the liver; required amino acids are taken from the liver to the body cells for synthesis; unavailable amino acids can be obtained through transamination – where the amino group is transferred to a substance not containing nitrogen / to an alpha keto acid; thereby making a new amino acid;</p> | 2 |
| 1(c)(ii) | <p>the body needs to degrade and resynthesise proteins constantly – to build structural proteins for growth and repair – and functional proteins / enzymes – as they are involved in reactions; illness / injury / pregnancy increases the need for structural protein synthesis – activity / illness increases the need for functional protein synthesis;</p> | 3 |
| 1(d) | <p>body cells produce <i>metabolic water</i>; as a by-product of oxidative metabolism; of energy-giving nutrients / fat / carbohydrate / protein;</p> | 2 |
| 1(e) | <p>enzyme deficiency – leading to a food intolerance; phenylalanine – is an essential amino acid – must be obtained from foods; is (hydrolysed by) phenylalanine hydroxylase; person (with phenylketonuria) is unable to make this enzyme;</p> <p>person (with phenylketonuria) must avoid HBV protein foods like meat / fish / eggs / cheese / milk; must avoid aspartame; symptoms include an accumulation of phenylalanine in the blood and brain;</p> | 4 |

| Question | Answer | Marks |
|----------|--|-------|
| 1(f) | <p>saturated fat – provides a concentrated source of energy – provides a reserve of energy – provides fat-soluble vitamins – provides insulation / adipose tissue – protects vital organs / kidneys – forms structure of cell membranes;</p> <p>zinc – makes new cells and enzymes – helps to process protein / carbohydrates / fat – helps to heal wounds;</p> <p>iron – synthesis of myoglobin – prevents anaemia;</p> <p>phosphorous – component of bones and teeth – energy storage and transfer – cell division – component of ATP / adenosine triphosphate / for energy release – helps to metabolise fats and proteins – helps to keep blood pH neutral / pH 7.4;</p> <p>selenium – synthesis of antioxidant enzymes – stimulates production of antibodies after vaccination;</p> <p>sodium – nerve impulses – cell fluid concentration;</p> <p>vitamin B₁ / thiamine – release of energy from carbohydrates – healthy nervous system;</p> <p>vitamin B₂ / riboflavin – normal growth – healthy mucous membranes – healthy nervous system;</p> <p>vitamin B₃ / niacin – releases energy from macronutrients – prevents pellagra;</p> <p>vitamin B₁₂ / cobalamin – protein metabolism – synthesis of red blood cells;</p> <p>folate – synthesis of red blood cells – synthesis of DNA – prevention of neural tube defects;</p> <p>vitamin D – absorption of calcium;</p> | 4 |

| Question | Answer | Marks |
|----------|--|-------|
| 2(a) | <p>3 hydroxyl groups / –OH – from a single glycerol molecule – form ester bonds – with the carboxyl group / COOH – of 3 fatty acids;</p> <p>may / may not be the same 3 fatty acids – may / may not be saturated;</p> <p>simple triglyceride – same fatty acids;</p> <p>mixed triglyceride – different fatty acids;</p> <p>suitable correct diagram;</p> | 3 |

| Question | Answer | Marks |
|----------|--|----------|
| 2(b) | <p><i>oesophagus</i> – peristalsis pushes food to the stomach;</p> <p><i>stomach</i> – muscle action breaks food down and a chyme is formed as gastric juice and mucous mixes with the food – there is no chemical breakdown of lipids;</p> <p><i>pancreas</i> – secretes pancreatic lipase;</p> <p><i>gall bladder</i> – stores and secretes bile;</p> <p><i>duodenum</i> – bile emulsifies fats into small droplets – pancreatic lipase breaks down fat into glycerol and fatty acids;</p> | 5 |
| 2(c) | <p>omega 3 marine fish / fish oils / herring / sardine / mackerel; anti-inflammatory benefits; offers protection against CHD; reduces levels of triglycerides in the blood; brain health;</p> <p>omega 6 – corn oil / nuts / seeds / evening primrose oil / olive oil; lowering LDL cholesterol; protects against cancer; some evidence exists for omega 6 reducing the positive effects of omega 3;</p> <p>omega 9 – olive oil / almonds / avocados / sesame oil / cashews / macadamia nuts / peanuts; reduces cholesterol; improves blood circulation / prevents hardening of the arteries; strengthens immune system; maintains blood sugar level / lowers resistance to insulin;</p> | 7 |
| 2(d) | <p>targets free radicals in the bloodstream; prevents free radicals from damaging cell membranes; prevents oxidation / is an antioxidant; of PUFAs / vitamin A / vitamin C; helps protect against cancer / CHD / arthritis / prevents vascular disease; essential for good quality hair and nails and for eye health;</p> | 3 |
| 2(e) | <p>emulsifier – encourages two immiscible liquids to mix together – oil in water – water in oil – molecules have a hydrophilic head – hydrophobic tail; the head of the molecule is attracted to water and the tail of the molecule is attracted to oil;</p> <p>suitable correct diagram;</p> <p>emulsifier molecules surround the oil droplets and prevent separation / give stability;</p> <p>used in salad dressing / ice cream / margarine;</p> | 4 |
| 2(f) | <p>tinted or opaque glass / ceramic / stainless steel bottle – not copper / iron / reactive metals – chemical reactions could contaminate the oil;</p> <p>cool place – maintain flavour / prevent solidifying / slow down microbial activity;</p> <p>away from light – prevent oxidative rancidity – maintain nutritional value;</p> <p>away from strong odours – as the oil can absorb the odour;</p> <p>covered / with a lid / stopper – to prevent entry of physical contaminants – entry of water may cause hydrolytic rancidity;</p> | 3 |

| Question | Answer | Marks |
|----------|---|-------|
| 3(a) | <p>food choices directly affect health – diseases caused by poor nutrition take time to develop – adults make poor nutritional choices because the relationship between diet and health is not immediately obvious – adults should follow basic nutritional guidelines;</p> <p>requirements for energy and nutrients do not change greatly between 19–50 years – except during pregnancy / lactation / activity / convalescence; recommended daily intake for men is 10 500 kJ and 8 500 kJ for women; long-term positive energy balance leads to obesity / CHD / stroke / type 2 diabetes;</p> <p>obesity occurs when calories not burned in energy expenditure are stored – as adipose tissue – for later use – as energy reserve – can lead to CHD; coronary arteries – become blocked – by atheroma – blood cannot easily reach the heart – heart becomes starved of oxygen – heart has to work harder to pump blood – heart attack may occur;</p> <p>total RDI of fats is 35% of food intake – saturated fats is 11–24% – polyunsaturated fats – restrict saturated fats – restrict hard cheeses / cream / dairy – substitute with cheese made with skimmed milk / cottage cheese – eat white meat / chicken / fish – instead of red meat / beef / lamb – avoid fried food – grill / bake instead – use low-fat spreads – instead of margarine / butter – avoid sausages / processed meats;</p> <p>total RDI of trans fats is 2% – can lead to high cholesterol – linked to the development of CHD – cholesterol can block coronary arteries – avoid biscuits / pastries / crisps;</p> <p>inflammatory diseases / cancers can result from a lack of omega 3 – from fish oils;</p> <p>lack of energy / cancers / skin complaints can result from poor vitamin and mineral intake – eat at least five portions of fruit and vegetables on a daily basis – portion = 80 g – wide variety is essential to access different vitamins and minerals;</p> <p>lack of energy / constipation / dehydration can result from a low intake of water – drink at least 2 l of water per day;</p> <p>constipation / diverticulitis / colon cancer – can occur as a direct result of low NSP intake – eat more fibre-rich foods to feel fuller – wholewheat / wholegrain breads / pastries / pasta / rice – avoid refined white rice / pasta / flour – RDI is 18 g;</p> <p>hypertension / high blood pressure – can result from high sodium intake – extra pressure is exerted on blood vessels – causes the heart to work harder – may damage arteries – fat deposits in arteries – narrows space for blood flow – causes hypertension – salt causes tissues to retain water – contributes to increased blood pressure – may develop heart disease – have a stroke – sodium RDI is less than 6 g;</p> <p>dental caries are a result of too much sucrose – sucrose on teeth is a nutrient for bacteria – acid produced – destroys tooth enamel – sweet flavour of sucrose is addictive – leads to overeating – high in energy – leads to obesity and can lead to type 2 diabetes;</p> | 10 |

| Question | Answer | Marks |
|----------|--|----------|
| 3(b) | energy taken in equals the energy expended; labelling shows energy RDI; labelling shows energy content per 100 g / per portion; enables consumer to keep track of energy consumed; | 3 |
| 3(c) | schools / colleges / universities; doctor's surgery / hospitals – posters / leaflets; WHO campaign – visiting health professional; aid charities; knowledge from parents / family; internet access; library; food packaging; TV; | 3 |
| 3(d) | convenience foods are partly or fully prepared / ready-made by the manufacturer – save time for the consumer; frozen foods retain nutrients well – as frozen soon after harvesting; some convenience foods are low in fat / high in fibre / low in sugar / low in salt – responding to health awareness of the consumer; trans fats have been removed from many food products – in response to awareness of the damage they cause; additives can replace high sugar content of foods – aspartame; tinned fruit high in nutrients – packed in natural juices not syrup; street food stalls / supermarkets – offer ready-made salads – wide variety of vegetable / fruit ingredients; healthy snack available – pieces of fruit / bags of dried fruits / bags of nuts; portion sizes of ready-meals are appropriate / measured – averts tendency to overeat; products / ready-meals available for special diets – gluten free / lactose free huge range of ready meals / product choice available – provides variety of ingredients / avoids repetition; labelling – allow people to assess nutrition intake; some foods like cereals are fortified; | 5 |
| 3(e) | margarine – vitamin A / vitamin D; bread – calcium; salt – iodine; breakfast cereals – B vitamins / iron; fresh orange juice – calcium; milk – vitamin D; soya milk – calcium / vitamin D; | 4 |

| Question | Answer | Marks |
|-----------|---|-------|
| 4(a) | <p>different triglycerides melt at different temperatures – depending on the combination of fatty acids that they are composed of;</p> <p><i>melting point</i> the temperature at which a fat turns into an oil – fats containing saturated fatty acids – melt at lower temperatures – animal fats / hard fats / butter / lard –</p> <p><i>smoke points</i> the temperature at which a blue haze of smoke is seen – fat molecules are breaking up – fats and oils containing fewer free fatty acids have a higher smoke point – are good for frying – margarine / butter contains water and additives – giving them a low smoke point –</p> <p><i>plasticity</i> the temperature range of fats in which they are soft and spreadable / hold shape under light pressure – fats containing unsaturated fatty acids are more plastic – sunflower margarine –</p> | 8 |
| 4(b)(i) | <p>lactation – water needed to manufacture breast milk; fever – water needed to replace what is lost through sweating; after energetic sport – water needed to replace what is lost through sweating; food poisoning – water needed to replace what is lost through vomiting and diarrhoea; hot weather – causes sweating; constipation – water drunk to soften stool;</p> | 3 |
| 4(b)(ii) | <p>deficiency in vitamin B₁ / thiamine – from eating polished rice – keeping quality is improved but nutrients are removed in husk;</p> <p>wet beriberi – enlargement of heart then heart failure – dry beriberi – nervous system affected causing partial paralysis – muscular weakness – neuritis / nerves become inflamed – painful – mental confusion – retarded growth in children –</p> | 3 |
| 4(b)(iii) | <p><i>megaloblastic anaemia</i> unable to manufacture enough healthy blood cells – red blood cells become enlarged – cannot give up their oxygen – caused by a deficiency in folate / vitamin B₉ and / or vitamin B₁₂ –</p> <p><i>pernicious anaemia</i> autoimmune response – caused by a deficiency in vitamin B₁₂ – immune system attacks healthy stomach cells – prevents body from absorbing vitamin B₁₂ from the food –</p> <p>both types of anaemia result in pale skin / fatigue / muscle weakness / depression / breathlessness;</p> | 5 |
| 4(b)(iv) | <p>stored as glycogen – in the liver / muscles – for quick release – in times of activity –</p> <p>stored as fat – in adipose tissue – for slow release – when starving / dieting to lose weight – for activity when glycogen stores are used up –</p> | 3 |

| Question | Answer | Marks |
|----------|---|-------|
| 4(c)(i) | $C_6H_{12}O_6 + 6O_2 \rightarrow 6CO_2 + 6H_2O$ | 2 |
| 4(c)(ii) | part of the hormone thyroxine – thyroxine controls metabolic rate / speed of energy release – | 1 |

| Question | Answer | Marks |
|----------|---|-------|
| 5(a)(i) | intestines of cattle / animals – raw meat – animal faeces – unpasteurised milk / cheese; stomach cramps – diarrhoea – vomiting – fever; | 2 |
| 5(a)(ii) | thorough hand washing – especially after using the toilet – or touching animals; cook meats to over 72 °C for at least 2 minutes – check core temperature with a food probe; avoid unpasteurised milk / cheese / cider / fruit juice; avoid swallowing water when swimming; clean kitchen surfaces / equipment with hot soapy water; | 2 |
| 5(b) | varied menus and rapid food service – to offer wider choice and speed care and standards may decline; increased use of convenience foods – consumers may not reheat them correctly; increase in factory farming – cramped / unhygienic conditions where disease is easily spread; geese / chickens / calves carry <i>E.coli</i> and other pathogens; increased importing of animal feeds – may be contaminated; increase in take-away meals – may be transported at temperatures in the danger zone; use of untrained staff / insufficient staff training – to save money; increase in imported foods – where food hygiene laws may not be enforced; | 3 |
| 5(c) | when bacteria is transferred from food / surfaces / hands / equipment to a cooked / ready-to-eat food; do not use the same chopping boards / knives for raw food as ready-to-eat food; do not place uncooked meat on a surface and then place the other food on top; clean worktops and equipment with hot water and detergent; cover raw meat and put at the bottom of the fridge – so that blood cannot drip onto foods below; clean and change dishcloths regularly; wipe up spillages immediately; keep animals out of the kitchen; empty and clean bins regularly; | 4 |

| Question | Answer | Marks |
|----------|---|----------|
| 5(d) | <p>insecticides / pesticides / herbicides / fertilisers – traces left after harvesting could be toxic;</p> <p>fly sprays – used near foods in kitchen;</p> <p>antibiotics injected into livestock – traces in food can cause allergic reactions in people / increase antibiotic resistance;</p> <p>industrial pollutants enter rivers and water courses – animals and plants contaminated in food chain;</p> <p>heavy metals / mercury – in fish / tuna / shark;</p> <p>cadmium contamination from cigarettes / cadmium batteries;</p> <p>nuclear waste – in marine life from submarine leak / in the air from power station leak;</p> <p>cosmetics / soaps / perfumes – not adhering to personal hygiene regulations;</p> <p>bleaches / cleaning fluids – undiluted / not rinsed after kitchen cleaning;</p> <p>lead pollution from traffic – affects crops;</p> <p>lead water pipes – contaminate drinking water supplies;</p> <p>lead-based paints – in older glazed food dishes;</p> <p>plasticisers – packaging;</p> | 6 |

| Question | Answer | Marks |
|----------|--|-------|
| 5(e) | <p><i>problems</i></p> <p>poisoning – water in reservoirs polluted by chemicals / radiation; animal faeces in rivers – contaminates drinking water; people washing clothes / bodies in rivers – contaminates water; long-distance food transportation / import / export – levels of pathogenic bacteria could become dangerous through incorrect storage; lack of traceability – animals could be slaughtered in unhygienic environments; passengers like banana spiders – bite / poison; natural disaster / earthquake – damage to water supply – water becomes contaminated; war / conflict prevents food distribution – people become hungry / desperate and eat out-of-date food; food sold on black market – no traceability or idea of hygiene procedures – unlikely to have preparation guidelines / labelling; disease arising from poor sanitation – leads to cholera – dysentery; parasites arising from cattle living in close proximity with people – beef tapeworm; allergic response to additives used to preserve foods that travel a long way – accumulate in the body; GM – different regulations in different countries – unknown implications; factory farming – hormone treatments;</p> <p><i>solutions</i></p> <p>cooking to kill pathogens; boiling water to kill pathogens; educate people about sanitation; eat locally produced / grown goods to cut down on travel time; grow your own foods; check meat for cysts; buy foods from reputable shops / outlets;</p> | 8 |

| Question | Answer | Marks |
|----------|--|-------|
| 6(a)(i) | <p>an agricultural crop which is grown for sale to return a profit – a marketed crop – beneficial to the economy – often exported – not a subsistence crop – which is grown to feed a family or a family’s animals – examples included –</p> | 2 |
| 6(a)(ii) | <p>in LEDC cash crops that are grown tend to be ones that attract demand in developed countries – have export values; MEDC may find it difficult to export because of low tariffs and subsidies – MEDC able to export to developing nations at low prices – LEDC have to compete with the low prices set by the MEDC; land is used in LEDC for large farms that are owned by large corporations – locals are employed on the farms – paid very little – despite huge profits for the owners; locals may subsistence farm to feed themselves – but do not harvest enough to sell and enable reinvestment; LEDC may export crops whilst their native people go hungry;</p> | 4 |

| Question | Answer | Marks |
|----------|--|-----------|
| 6(b) | loss of local stores / butchers / grocers / bakeries – effect on local economy; food miles – imported goods; fair trade produce versus non-fair trade – consideration of ethics of supply; packaging – increased quantities to aid distribution of imports – increased litter – increased need for tree felling for paperboard; pricing strategies – BOGOF – low prices on unhealthy foods like crisps / alcohol / frozen pizzas – high prices on fresh fruit and vegetables; free-range versus intensively farmed – cost to consumer; organic – higher prices; farm assured – improvement here in transparency and identification of quality – change of origin of produce; seasonality – importing products to have availability all year round; trawled fish – capture unwanted species – not returned to the sea; | 10 |
| 6(c) | eggs – in soft, cup shaped cartons – to avoid cracking the shell – not above 20 °C; live animals – safely secured – not overcrowded – not long journeys; refrigerated products – refrigerated lorries – 1–5 °C; frozen products – freezer compartments in lorries – ≤–18 °C; hot meals – in a vehicle containing a hot holding unit – temperature above 65 °C; crushable products / biscuits – closely packed – to avoid movement – in secondary packaging boxes; fruits – in cool but not cold conditions – to avoid ripening – yeast growth – fermentation; milk – in refrigerated tankers; bubble wrap / foam / polystyrene – for wrapping – will absorb impact if items are dropped / squashed; wooden crates – are stackable – allows air to circulate around fruit; | 4 |
| 6(d) | read the instruction manual; receive training in the use of the food processor; plug in the machine with dry hands; check that the flex is not worn / frayed / exposed; ensure the unit is PAT tested annually; ensure that the unit is clean before use; do not overfill the bowl; ensure that the lid is fitted into position correctly; do not insert anything other than food into the tube opening when in operation; handle the blade carefully when fitting / washing / removing; do not wash the electrical unit; | 3 |
| 6(e) | triangular positioning of sink, hob and fridge – to make the working space efficient / logical – to eliminate extra movement / waste of personal energy – to facilitate the sequence of food storage to food preparation, to cooking, to serving, to clearing up – | 2 |

| Question | Answer | Marks |
|----------|---|-------|
| 7(a)(i) | <p><i>recipe (or equivalent proportions)</i> 200 g plain flour / strong plain flour – 75 g yellow fat / margarine / butter – 75 g white fat / lard – water (enough to form a dough) – pinch of salt – lemon juice –</p> <p><i>method</i> sieve flour and salt – rub half white fat into flour – add water to form a dough – roll out to a rectangle – mix remainder of white fat and yellow fat together – dot third of the fat over two-thirds of the rectangle – fold fatless third over middle third and fold final third on top – seal edges with rolling pin – chill for 10 minutes – rotate 90° – repeat dotting of fat, folding, chilling and turning with half of remaining fat – repeat once more with remaining fat – roll and fold once more and chill for 30 minutes –</p> | 5 |
| 7(a)(ii) | <p>fat – coats and separate flour particles – lard has a higher melting point – melts during baking – leaving large air spaces – creating a flaky texture –</p> <p>butter / margarine adds colour and flavour;</p> <p>strong plain flour – develops strands of gluten – to give elastic structure that stretches and rises;</p> <p>lemon juice – develops gluten – improves whiteness of pastry;</p> <p>salt – enhances flavours – strengthens gluten;</p> <p>water – helps to form a dough – too much water will develop too much gluten – giving a tough pastry – water evaporates when heated – creates steam to raise the layers of pastry;</p> | 5 |
| 7(b)(i) | <p><u>conduction</u> – particles in the metal of the baking tray vibrate rapidly when heated – neighbouring particles also vibrate and heat is transferred through the tray to the food – rate of conduction is faster in metals than other materials –</p> <p><u>convection</u> – heat moves from a high temperature to a lower one – until a constant temperature is achieved – occurs in liquids and gases – hot gas expands and rises – cooler gas takes its place – cooler gas heats up – expands and rises – convection current established –</p> | 5 |

| Question | Answer | Marks |
|-----------|---|-------|
| 7(b)(ii) | <p><i>safely</i> ensure gas or electricity supply is not faulty – training – read the manual – ensure gas is ignited – wear oven gloves – close the door –</p> <p><i>efficiently</i> preheat – adjust tray heights before preheating – ensure trays / dishes fit in at the same time as each other – use fan assist if available – set timer – ensure door closes firmly – avoid opening the door – leads to increased cooking time – loss of heat energy –</p> <p><i>economically</i> cut food into small pieces – use all available space whilst oven is on – freeze food for later – use small top oven if available – set at correct temperature – turn off immediately after use – preheat shortly before use – to save energy –</p> | 6 |
| 7(b)(iii) | 200–220 °C | 1 |
| 7(c) | <p>used in cake mixture / scones – stabiliser in meringue – to give a creamy texture – increase volume of beaten egg whites –</p> <p>acidic component – of baking powder – combines with sodium bicarbonate and liquid – to produce carbon dioxide – a raising agent –</p> | 3 |

| Question | Answer | Marks |
|-----------|--|-------|
| 8(a) | <p>made of many β glucose molecules connected together at carbon atoms 1 and 4 along the polymer chain;</p> <p>large chains of β glucose molecules lying in parallel are connected by hydrogen bonds;</p> <p>insoluble in water;</p> <p>humans do not have the enzyme needed to rupture the β-1–4 links between the glucose units;</p> <p>suitable correct diagram;</p> | 3 |
| 8(b)(i) | apples – plums – damsons – blackcurrants – cranberries – quince – unripe cherries – elderberry – | 1 |
| 8(b)(ii) | pectin | 1 |
| 8(b)(iii) | used to set jams – by forming a gel in water – that sets on cooling – boiling fruit and sugar together – releases pectin from the fruit – it forms a three-dimensional network with the water, sugar and starch molecules in the fruit – | 2 |

| Question | Answer | Marks |
|----------|--|-------|
| 8(c) | <p><i>too much non-starch polysaccharide</i> vegetarians unable to eat meat proteins – meat proteins are filling – and provide HBV – large amounts of bulky – high fibre foods eaten to provide protein in complementation – baked beans on wholemeal toast / lentil soup with wholemeal bread –</p> <p><i>problems</i> feel full very quickly – build up of gas – stomach ache – diarrhoea – decreased transit time – poor absorption of nutrients – large intake of phytic acid – binds to calcium and prevents absorption –</p> | 4 |
| 8(d) | <p>mycoprotein <i>Fusarium venenatum</i> – grown in a large sterilised fermenter – filled with pasteurised water and glucose – in carefully regulated conditions; micronutrients are added – potassium, magnesium and phosphate; protein solids are synthesised by the fungi – from waste carbohydrate by-products; protein solids are harvested every few hours and pumped into a centrifuge – liquid is separated off – protein is heated – then chilled; albumin and flavourings are mixed with protein dough; protein dough is steamed for 30 minutes, chilled, chopped and minced; protein dough is frozen – pushing protein fibres together – to give meat-like texture;</p> | 6 |
| 8(e) | <p>low in saturated fat – 0.5 g / 100 g – low in LDL cholesterol – low sugar – 0.6 g / 100 g – low salt – 0.3 g / 100 g – high in NSP – 5.5 g / 100 g – high in HBV protein – 14.5 g / 100 g – contains iron, zinc, calcium, potassium and phosphorous –</p> | 3 |
| 8(f) | <p><i>silicon dioxide</i>: anti caking agent / antifoaming agent; <i>smoke flavouring</i>: artificial flavouring; <i>gum arabic</i>: bulking agent / thickener / increase viscosity; <i>citric acid</i>: acidity regulator / antioxidant; <i>potassium chloride</i>: flavour enhancer – to bring out / enhance the flavours of the ingredients; <i>ammonium bicarbonate</i>: acidity regulator / raising agent; <i>tricalcium phosphate</i>: anticaking agent / humectant / acidity regulator;</p> | 5 |