

Food and Nutrition

Grade 11

Answer Tutorial 1

1 contains all nutrients in the correct proportion / amount; 1

2(a) oxygen – hydrogen – carbon – nitrogen – sulfur – 2

2(b) mixture of HBV and LBV protein (in same meal);
mixture of different LBV protein (in same meal); essential amino acids / IAA lacking in one can be compensated by the other; improves supply of essential amino acids / IAA;

rice pudding; scrambled egg on toast; beans on toast; lentil soup and bread roll; meatballs and spaghetti; egg curry and rice; egg fried rice; macaroni cheese; rice and peas; peanut butter sandwich; cereal and milk; cheese sandwich; chocolate mousse with gelatine; 4

2(c) growth / build new tissue; repair; maintenance / renewal; energy; manufacture of antibodies / enzymes / hormones; 2

2(d) marasmus; kwashiorkor; 2

2(e) protein cannot be stored; deamination / removal of amino group from an amino acid; nitrogen from amino acids is converted into ammonia; liver converts ammonia to urea; kidneys excrete urea in urine; remainder is used for energy / converted to glucose / stored as fat (under the skin) / stored as adipose tissue / stored around internal organs; gain weight / may lead to obesity / CHD;

3

2(f) chemical structure denatured / changed; this is permanent / irreversible; coagulation / setting occurs; overheating causes food to become less digestible; 2

2(g)(i) pepsin; 1

2(g)(ii) rennin; 1

2(g)(iii) trypsin; 1

2(g)(iv) erepsin; 1

3(a) formation / production / component of haemoglobin / red pigment in blood / red blood cells; transports oxygen to cells / in blood / cell respiration; prevents anaemia; 1

3(b) helps to form hydrochloric acid; needed for correct composition of body fluids; 1

3(c) prevents goitre; makes hormone thyroxine in thyroid gland; controls rate of metabolism / energy usage; 1

3(d) needed for energy production; development / maintenance of bones and teeth (with calcium); regulates acid balance in body; 1

4(a) production of visual purple; helps vision in dim light; healthy skin; formation of mucous membranes; keeps mucous membranes moist; helps to resist infection; antioxidant; prevents night blindness / xerophthalmia; normal growth in children; 2

4(b) apricots – asparagus – basil – bok choy – broccoli – Brussels sprouts – butter – capsicum / red / yellow / green pepper – carrot – cheese – crab-cream – eggs – fish liver oil – grapefruit – green leafy vegetables – kale – kidney – lettuce – liver – lobster – mango – margarine – melon – milk – oily fish – papaya – parsley – peas – plum – pumpkin – red meat – salmon – sardine – shrimp – spinach – squash – sweet potato – Swiss chard – tomatoes – tuna – watercress – yogurt – 1

5(a) seeds / named examples – nuts / named examples – pulses / legumes / named examples – dried fruit / named examples – wholegrain cereals – maize – wholegrain breakfast cereal – brown rice – wholemeal / brown pasta – fruit / named examples – vegetables / named examples – wholemeal bread – wholemeal flour – oats – bran – rye / named examples – 2

5(b) adds bulk; absorbs water (in colon); softens faeces; helps prevent constipation; makes it easy to remove faeces / regularly; stimulates peristalsis (and helps to clear waste); binds food residues / helps to remove toxins; can reduce blood cholesterol; gives feeling of fullness / limits intake of carbohydrates / helps control weight; help lower blood glucose levels; helps prevent hernia; helps reduce risk of colon cancer / bowel cancer; helps prevent diverticular disease; helps prevent haemorrhoids; helps prevent varicose veins; 5

6 protein – repair / body-building; low-fat diet / do not fry food – difficult to digest fat; low energy – not as active; iron – replace blood lost; vitamin C – absorb iron / heal wounds / antioxidant / protect immune system; calcium after fractures etc. – repair damaged bone / prevent osteoporosis – lack of movement / elderly more at risk; vitamin D – absorb calcium; small, frequent portions – easier to digest / breaks monotony / appetite reduces with age; meal must be small but nutritionally dense as appetite diminished; provide a variety of colour / texture / flavour – tempt appetite; not too highly flavoured / spicy – difficult to digest; not a strong aroma – so not off-putting / make feel ill; follow doctor’s advice; do not serve raw eggs / lightly cooked eggs – salmonella risk; consider ethnic / cultural / religious / personal preference – respect / provide acceptable meals which will be eaten to help recovery; remove bones – poor eye sight / choking / easier to eat; soft / tender food – no teeth / false teeth; light (steamed) food – easy to digest; purée food / small pieces – easier to chew; increase liquids – prevent dehydration; ensure high hygiene standards to avoid infection when immune system is already weak; no leftovers to avoid possibility of food poisoning; 5

7(a) how to make the cake mixture using the creaming method

cream margarine and sugar; cream with wooden spoon / electric mixer; cream until light and fluffy / pale colour / white; beat eggs; add beaten eggs gradually/slowly to creamed mixture; beat

well between each addition; sieve flour; fold flour into mixture with metal spoon to obtain soft dropping consistency; 5

7(b) functions of ingredients ingredient function margarine keeps cake fresh longer / extends shelf life; traps air when creamed / raising agent / lightens mixture; adds colour; increases moisture / prevents cake drying out; adds nutritional value; egg protein in egg coagulates on heating to form shape of cake; adds colour; emulsifies / holds fat and water / prevents curdling; provides air / steam (to help cake rise) / raising agent; adds moisture; adds nutritional value; 4

7(c) different ways of decorating the finished small cakes sieved icing / powdered sugar; icing / butter cream / glacé / fondant / frosting / ganache; fruit / dried fruit; coconut; chocolate buttons / curls / chips; sprinkles; sweets; chopped nuts; cream; 2

7(d)(i) ingredient in the cakes which causes caramelisation (caster) sugar; 1

7(d)(ii) effect of dextrinization surface of the cake changes to a golden brown colour; 1

7(e) reasons why paper cases are useful when making small cakes

keeps shape of cake during cooking; protects cake from heat / may prevent burning / poor conductor of heat; contains the mixture; consistent appearance / uniform size; prevent sticking to tins / easy to remove from tin; less washing up; hygienic; 3

8 reasons why convenience foods are popular

easy to store / long shelf life so can shop less often; may take up less storage space than natural components therefore useful for those with limited space; can be stored and used in emergencies such as unexpected visitors / typhoon; saves time shopping for ingredients / less washing up needs to be done / quick to prepare / cook; saves fuel energy due to fewer cooking processes / quick reheating; can buy in one portion sizes / suit people living on their own; portion controlled so no waste / eat less; may prove cheaper / no need to buy each separate ingredient; consistent quality / result / know what you are getting; may taste better than when made at home; require little skill / cook may have limited skill / saves effort / easy to cook; large variety available / multicultural options / unseasonal products / budget range so provides greater choice / good for likes and dislikes of family members; some specialise in different dietary needs and can be helpful for consumers dealing with different needs; may have extra nutrients added / fortified; label includes cooking / storage instructions useful for those who have limited knowledge; less equipment needed for preparation / cooking; good for families who eat at different times / suits lifestyles; nutritional information on packaging can check for allergy ingredient / intolerance / specific nutrients; 8

9 a) Varieties of cheese Cheddar – Cheshire – Wensleydale – Stilton – Lancashire – Cottage – cream cheese – Brie – Roquefort – Parmesan – Gouda – Edam etc. 4 points 2 points = 1 mark [2]

(b) Cheese-making process milk heated – to 30°C (86°F) bacteria added – to convert lactose to lactic acid / add lactic acid bacteria reheated after 30 minutes enzyme rennin (as rennet) added curdles / milk clots – caseinogen coagulates with acid and rennet forms curds and whey curds cut – whey drained off curd scalded to 30°C (86°F) – for 45 minutes – stirred cut into small pieces salt added to preserve packed into moulds – sprayed with hot water pressed hard for 24 hours left to ripen – at 10°C (50°F) develops flavour – smell – texture – colour [4]

6(a) points to look for when buying fresh fish

bright eyes not sunken / prominent; firm / plump flesh; plenty of scales firmly attached / bright scales; stiff tail; skin moist but not wet; bright red gills; pleasant smell / fishy smell / sea smell / suigenis; closed shells; 3

6(b)(i) examples of oily fish herring; mackerel; salmon; 2

6(b)(ii) examples of shell fish crabs; lobster; mussels; prawns; 2

6(c) suitable coatings for deep frying batter; (egg and) (seasoned) flour; (egg and) breadcrumbs; (egg and) oatmeal; pastry; 2

6 (d) use back burner if possible so less chance of being knocked over; pan handle turned in to avoid knocking over; pan should have flat base so it does not wobble; pan not more than half full to prevent overflowing when food is added; dry food thoroughly before putting into fat preventing food spitting / splutter; put food into pan carefully / do not throw food into pan to avoid splashing; do not overfill pan with food or oil may overflow / leave enough space for food to be turned; do not overheat oil as this could catch on fire; have lid / fire blanket / damp cloth nearby to cover pan / prevent oxygen reaching flames if it catches fire; do not move pan if on fire due to safety hazard for kitchen and chef; do not leave unattended may ignite / overflow; turn heat off if oil begins to smoke fat is near flash point; the pan / equipment / utensils should be dry before using to prevent oil spitting; 4

6(e) ways to make steamed white fish more appetising

sauces to add colour e.g. parsley sauce; use of garnish e.g. dill / tomato; accompaniments e.g. colourful named vegetables; 4

10 (a)

iron; to produce all the blood needed to supply nutrition to the placenta; prevent anaemia

vit B9/folic acid/folate; prevention of spina bifida

essential fatty acids; linoleic acid/linolenic acid; needed for fetal brain growth

vit D; prevent low birth weight; osteomalacia in the mother

vit B12; fetus stores mother's B12 supply to use in first six months after birth

calcium; fetus may use calcium from mother's skeleton to supply its own skeleton

NSP; prevention of constipation

reasons for following a vegetarian diet when pregnant believe that vegetarian diet is more healthy; animal fat has cholesterol; associated with CHD; obesity; meat is high in fat; don't want to put on too much weight during pregnancy

recent health scares; BSE/

bird 'flu etc.; illness could affect the health of the fetus

cooked and raw meat products often the cause of food poisoning; campylobacter

/ salmonella / E.coli; want to avoid vomiting and diarrhoea during pregnancy

should avoid pâté; contains listeria; liver/liver sausage;

too much vit A; can harm fetus

excess tuna; contains mercury; can damage fetus' nervous system

sushi; fish may contain small parasitic worms; raw shellfish; bacteria and viruses

all easy to avoid if following vegetarian diet

reasons for not following a vegetarian diet when pregnant may lack vit A / beta carotene; may lack vit D; may lack calcium; may lack iron; may lack B vits; especially B9/ folate; B12 /

cobalamin; may lack fat; essential fatty acids; may lack protein; may lack HBV protein; may lack iodine

may find a vegetarian diet monotonous

intake of NSP may be too high; may interfere with absorption of minerals

ways to ensure that pregnant women following a vegetarian diet get sufficient nutrients

may be able to eat HBV protein foods from animals; if ovo-lacto vegetarian; eggs

/ milk / cheese / yoghurt; must still follow safety advice about eggs and cheese

can complement or pair protein foods; essential amino acids missing from one are supplied by the other; combine HBV and LBV proteins in same meal; e.g. egg fried rice; combine LBV protein foods in same meal; cereals / nuts / pulses; beans on toast; eat soya products for HBV protein; tofu / soya milk / soya flour / tempeh / TVP; eat quorn; quorn mince / burgers / fillets; vit A /

10 (b) herbs are edible grasses/ leaves; e.g. parsley/sage/ bay/thyme/

Herbs such as parsley, thyme, sage and rosemary are the leaves of plants.

used in parsley sauce/sage in stuffing/infused in tea; can be use dried or fresh; store dried herbs in dark places to preserve colour;

parsley is often used to flavour white sauce when it is an accompaniment to fish, mint is served with roast lamb

Spices can be obtained from roots, stems, flowers, seeds or bark. Common examples of spices are cinnamon, ginger, mustard, nutmeg and turmeric. they are used to add colour, flavour and aroma to dishes and that they can stimulate the flow of digestive juices.

spices are from root/stem/flower/seed/bark; e.g. nutmeg/cinnamon/cloves/used in gingerbread/ ginger is used to make gingerbread or biscuits

mustard in cheese sauce; stimulate flow of digestive juices/aids digestion;add colour; add flavour / season; add aroma; used in small amounts;

fresh herbs and spices give the best flavour.

their flavours are strong they should be used sparingly

Also refer to notes given in class.