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Mark Scheme (Results)

June 2011

GCE Design and Technology: Food Technology (6FT03).

Paper 01: Food Products, Nutrition and Product Development.

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General Marking Guidance

- All candidates must receive the same treatment. Examiners must mark the first candidate in exactly the same way as they mark the last.
- Mark schemes should be applied positively. Candidates must be rewarded for what they have shown they can do rather than penalised for omissions.
- Examiners should mark according to the mark scheme not according to their perception of where the grade boundaries may lie.
- There is no ceiling on achievement. All marks on the mark scheme should be used appropriately.
- All the marks on the mark scheme are designed to be awarded. Examiners should always award full marks if deserved, i.e. if the answer matches the mark scheme. Examiners should also be prepared to award zero marks if the candidate's response is not worthy of credit according to the mark scheme.
- Where some judgement is required, mark schemes will provide the principles by which marks will be awarded and exemplification may be limited.
- When examiners are in doubt regarding the application of the mark scheme to a candidate's response, the team leader must be consulted.
- Crossed out work should be marked UNLESS the candidate has replaced it with an alternative response.
- Mark schemes will indicate within the table where, and which strands of QWC, are being assessed. The strands are as follows:

  i) ensure that text is legible and that spelling, punctuation and grammar are accurate so that means is clear

  ii) select and use a form and style of writing appropriate to purpose and to comp0lex subject matter

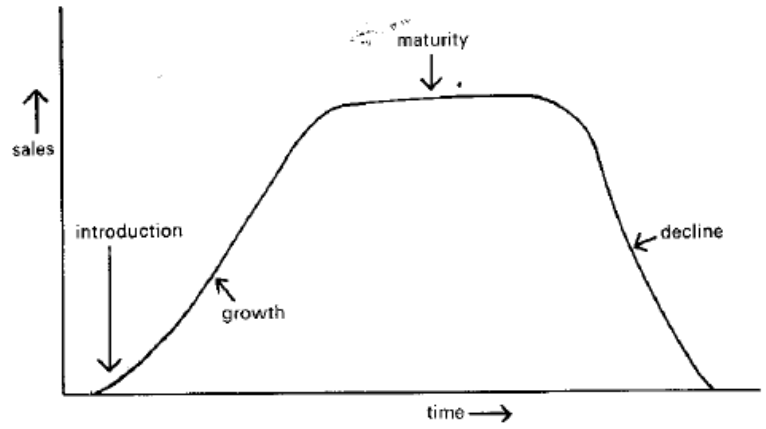
  iii) organise information clearly and coherently, using specialist vocabulary when appropriate

Question Number	Answer	Mark
Q01(a)	Any two of the following: • lysoyme **(1)** • ovomucoid **(1)** • trypsin **(1)** • avidin **(1)** • conalbumin **(1)** • ovalbumin **(1)** • lipovitellin **(1)**	**2**
Q01(b)	Egg yolk: • rich in nutrients **(1)** • good emulsifying properties **(1)** • due to lecithin **(1)** • colour **(1)** • flavour **(1)** • aerates **(1)** • coagulates **(1)** • shortening **(1)** • binding (1) • glaze (1)	**3x1**
Q01(c)	The white of an egg has anti-microbial properties due to: 3 of the following: • an enzyme destroying bacteria **(1**) or lysozyme (1) • a protein binding iron needed by bacteria **(1)** • a protein inhibiting bacterial enzyme **(1)** • a protein binds a vitamin **(1)** • higher pH **(1)** • removed	**3x1**
	Total for question	**8**

Question Number	Answer	Mark
Q02(a)	Any two of the following : • sugar cane **(1)** • sugar beet **(1)** • date palm **(1)** • sorghum **(1)** • sugar maple **(1)**	**2**
Q02(b)	Any 6 points from the following: • cane is crushed (or beet) **(1)** • spray with water **(1)** • solution formed **(1)** • solution purified/filtered **(1)** • lime and carbon **(1)** • clarify with dioxide added (1)charcoal (1) • solution concentrated by evaporation **(1)** • crystals of sugar form **(1)** • crystals separated by spinning in a drum **(1)** • refining then carried out (details not required) **(1)**	**6x1**
	Total for question	**8**

Question Number	Answer	Mark
Q03(a)	Two of the following: • coronary heart disease **(1)** • obesity **(1)** • diabetes **(1)** • certain cancers **(1)** • hypertension **(1)** • osteoporosis **(1)** • scurvy **(1)** • rickets **(1)** • bulimia **(1)** • anorexia **(1)** • lactose intolerant (1) • coeliac (1) • beri-beri (1) • pellagra (1)	**2**
Q03(b)	Two of the following: • vegetarian (1)- no meat **(1)** • ethnic and religious avoidance (1)- Hallal, no pork **(1)** • coeliac (1)- no gluten **(1)** • reduced calorie (1)- reduction in nutrient intake **(1)** • lactose intolerant (1)- no milk or dairy products **(1)** • diabetics (1)- no sugars except fruit or dairy **(1)** • vegan (1)- no animal products, dairy or eggs (1)	**2x2**
Q03(c)	• cost of fuel **(1)** • environmental impact / or carbon footprint **(1)** • effect on local producers **(1)** • effect on overseas producers **(1)** • variety **(1)** • out of season produce **(1)** • effect on transporters **(1)**	**4x1**
	Total for question	**10**

Question Number	Answer	Mark
Q04(a)	Answer to include 4 of the following: • malt is obtained by steeping barley in water **(1)** • allow the barley to stand in warm air**(1)** • barley allowed to sprout **(1)** • drying the sprouted barley **(1)** • grind malt barley **(1)** • add ground malt barley to water to extract sugars **(1)**	**4**
Q04(b)	**Red Answer to include 3 from each:** • Red wine uses red or black grapes **(1)** • grapes are crushed skins are retained **(1)** • yeast starter culture added **(1)** • fermented with their skins to obtain the red colour **(1)** **White** • white wine is made from any grapes **(1)** • grapes are crushed and skins removed **(1)** • juice extracted **(1)** • fermentation of juice only **(1)**	**6**
	Total for question	**10**

Question Number	Answer	Mark
Q05(a)	Four stages: either in words or on diagram: • introduction **(1)** • growth **(1)** • maturity **(1)** • decline **(1)** **Figure 2.21 Product life cycle**  	**4**
Q05(b)	Discussion of factors which may influence the generation of new food product ideas. Any 6 of the following: • legislation **(1)** • social trends **(1)** • using waste **(1)** • using under-utilised equipment **(1)** • cultural changes **(1)** • business/economic confidence **(1)** • influence of competition **(1)** • food scares **(1)** • new technological advances **(1)** • environmental issues **(1)** • travel **(1)** • demographics (1) • gaps in the market (1) • healthy eating issues (1) • fall in demand of existing product (1)	**6X1**
	Total for question	**10**

Question Number	Answer	Mark
Q06(a)	• Pasteurisation is necessary to eliminate disease / disease-causing organisms **(1)** • particularly tuberculosis (accept TB or *Mycobacterium tuberculosis*) **(1)** • reduce some spoilage organisms **(1)** • to extend shelf life **(1)** • to reduce waste **(1)**	**4**
Q06(b)	Any **four** of the following: • Cream separated from milk **(1)** • Bacterial starter culture to cream **(1)** • Churning the cream **(1)** • Butter fat and buttermilk separated **(1)** • Working butter fat to right moisture level **(1)** • Salt may be added **(1)**	**4**
Q06(c)	• A cream separator is used to make skimmed milk **(1)** • The separator rotates at high speeds (accept around 6500rpm) **(1)** • centrifugal force **(1)** separates out the heavier skimmed milk**(1)** from the cream **(1)**	**4**
	Total for question	**12**

Question Number	Answer	Mark
Q07	Four points from each of the three components: Carbohydrates: • provide energy for physical activity **(1)** • short-term energy reserve **(1)** • bigger molecules (polysaccharides) show slow energy release (1) • contribute fibre **(1)** • help digestive tract to function **(1)** • essential for brain activity **(1)** Fat: • source of energy **(1)** • insulator in the body **(1)** • protect vital organs **(1)** • solvent for some vitamins **(1)** • components of cell membranes **(1)** Proteins: • growth **(1)** • repair of cells and tissues **(1)** • required for chemical reactions as enzymes **(1)** • source of energy **(1)** • help fight disease working with vitamins and minerals **(1)**	**3X4**
	Total for question	**12**

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