

香港考試及評核局
HONG KONG EXAMINATIONS AND ASSESSMENT AUTHORITY
香港中學文憑考試
HONG KONG DIPLOMA OF SECONDARY EDUCATION EXAMINATION

PRACTICE PAPER
TECHNOLOGY AND LIVING (FOOD SCIENCE & TECHNOLOGY) PAPER 1

MARKING SCHEME
(updated as at 29 Feb 2012)

本評卷參考乃香港考試及評核局專為本科練習卷而編寫，供教師和學生參考之用。學生不應將評卷參考視為標準答案，硬背死記，活剝生吞。這種學習態度，既無助學生改善學習，學懂應對及解難，亦有違考試着重理解能力與運用技巧之旨。

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Marking Scheme

General Notes for Teachers on Marking

1. This marking scheme has been updated, with revisions made after the scrutiny of actual samples of student performance in the practice papers. Teachers are strongly advised to conduct their own internal standardisation procedures before applying the marking schemes. After standardisation, teachers should adhere to the marking scheme to ensure a uniform standard of marking within the school.
2. The marking scheme may not exhaust all possible answers for each question. Teachers should exercise their professional discretion and judgment in accepting alternative answers that are not in the marking scheme but are correct and well reasoned.

Section A:

Question No.	Key
1.	D
2.	C
3.	B
4.	C
5.	C
6.	B
7.	D
8.	C
9.	D
10.	B
11.	C
12.	A
13.	B
14.	D
15.	A

Section B

1. (a) Two different sketches to show design ideas with correct labels meeting the following specifications.
- The ratio of cereals, vegetable and meat is 3:2:1 (1)
e.g. specify quantity of cereals, vegetable and meat in the form of percentage/grams, with ratio of 3:2:1
 - low in unhealthy fats (1)
e.g. using low-fat cooking method, low fat alternatives, cooking oil rich in unsaturated fatty acid
 - an attractive appearance (1)
e.g. using colourful ingredients/the colour of sauce/arrangement/garnishing/presentation
 - high in dietary fibre (1)
e.g. using ingredients high in dietary fibre, such as wholemeal flour/brown rice
- (Each design idea: Max 4 marks) 8
- (b) Appropriate evaluation of the chosen idea with reference made to the following:
- how the ratio of 3:2:1 is achieved with the specified quantity of cereals, vegetable and meat. (1)
 - why the product is low in unhealthy fats (1)
 - why the product is attractive in appearance (1)
 - why the product is high in dietary fibre (1)
- 4
2. (a) - religious reason with elaboration (1)
e.g. Buddhists do not eat meat
- health reason with elaboration (1)
e.g. people who are overweight will not eat fish, meat, dairy products temporarily. They will only eat vegetables, fruits and nuts 2
- (b) - Plant proteins are usually low in biological value/lack certain type of essential amino acids, e.g. grains are low in lysine and legumes are low in methionine (1)
- The essential amino acid deficient in one kind of plant proteins will be complimented by the other (1)
 - Strict vegetarians have to consume a great variety of cereals, nuts and beans to ensure a good intake of all the essential amino acids (1)
- 3
- (c) Iron (1) and Vitamin B12 (1) 2
- (d) - The breakfast should not include any fish, poultry, meat including internal organs or dairy products (1)
- Nutritionally balanced – the breakfast should provide suitable types and adequate amount of foods and drinks that include the following:
carbohydrates, proteins, fats, vitamins and minerals (3)
- 4
- (e) - use of herbs (1)
- use of spices (1)
- 2

Section C

3. (a) - structure: nuclear family (1)
 - milestone: from the stage of honeymooners to parenthood (1)
- (b) - reproduction
 As a child was recently born in this family, it has performed the continuation of life in its kinship system (2)
 - socialisation
 The family is the first place for the child to learn how to socialise with others, imparting the basic values, beliefs and mode of behaviour consistent with family values, social norms and culture (2)
 - protection
 Amy and Peter are the family members responsible for protecting the family and providing social and economical security for their child to satisfy the child's economic and psychological needs e.g. sense of security, sense of belonging (2)
 - spiritual
 e.g. The couple's interactions with other family members of the kinship system is the fun of religious rituals e.g. worshipping ancestors etc. (2) 8
4. (a) - Lipoproteins are clusters of lipids associated with proteins (1) that serve as transport vehicles for lipids and cholesterol in the lymph and blood (1) 2
- (b) (i) - Apples contain soluble dietary fibre which has a cholesterol-lowering effect (1)
 - help in lowering low-density lipoprotein (LDL) cholesterol level (1)
 - Apples have no fat and will not increase the cholesterol level in the body (1) 3
- (ii) - Hard margarine is high in *trans fat* and saturated fats (1)
 - Both *trans fat* and saturated fats increase the level of low-density lipoprotein (LDL) cholesterol, the harmful cholesterol (1)
 - while *trans fat* at the same time reduces the level of high-density lipoprotein (HDL) cholesterol, the beneficial cholesterol (1) 3
- (c) - The ratio of high levels of 'bad' cholesterol – low-density lipoproteins (LDL) and low levels of 'good' cholesterol – high-density lipoproteins (HDL) is the main indicator of atherosclerosis (1)
 - During circulation, LDL cholesterol is deposited on the coronary artery walls, resulting in the formation of a hard and thick substance called cholesterol plaque. This leads to malfunctioning of the heart (1)
 - HDL cholesterol particles prevent atherosclerosis by reducing the cholesterol deposited on coronary artery walls (1) carrying cholesterol back to liver from peripheral organs (1) 4
5. (a) - A low carbon diet is one which minimises the emission of carbon dioxide released from the production, packaging, processing, transport, preparation, food waste and unsustainable farming practice (2)
 - Its importance is to reduce the impact on global warming (1) 3
- (b) Any two types of food items of seasonal local produce such as seasonal local vegetables, fruits as well as poultry
- Reasons:
 - Animal farming would produce more carbon dioxide than agricultural farming
 - Seasonal local vegetables/local poultry use less energy in food processing/packaging/transportation than imported or processed poultry
 (2 marks for the food items and 2 marks for two different reasons) 4
- (c) Any main dish that meets the requirements in (b) 1

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PRACTICE PAPER

TECHNOLOGY AND LIVING (FOOD SCIENCE & TECHNOLOGY) PAPER 2

MARKING SCHEME

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Section A

1. (a) All family members will gather to enjoy the meal together for the reunion (1) celebrate the passing of the year and welcome the new year (1) 2
- (b) - Fat Choi (Black moss) (1)
The pronunciation of black moss is similar to 'fat choi', its symbolic meaning is "increasing wealth" (1)
- dried oyster (1)
The pronunciation of 'dried oyster' is similar to 'good business', its symbolic meaning is "expansion of business and prosperity" (1)
- fish (1)
The pronunciation of fish is 'yue', its symbolic meaning is "having surplus, never short of anything" (1) 6
2. (a) - Wheat is a staple food in Beijing, while rice is a staple food in Guangdong province
Dumplings and noodles are often used to accompany main dishes in Beijing cuisine while in Guangdong, plain boiled rice is used (2)
- The flavour in Beijing cuisine is stronger, while Cantonese cuisine is mild (2)
- The coastal location of Guangzhou implies a rich supply of seafood in its cuisine while Beijing is situated inland, only fresh water fish is available (2)
- A great variety of vegetables are used in Cantonese dishes due to its mild climate which is suitable for growing different types of vegetables. In Beijing cuisine, the vegetables used are limited to a few types on account of its climate (2) 8
- (b) - The use of vegetable oil to replace lard reduces the amount of saturated fats in making the dough (1)
- Reducing the sugar content of the mooncake filling, such as lotus seed paste, can lower the energy value of the moon cake (1)
- Produce mini mooncakes (1) 3
3. (a) Menu A is suitable for Islamic students because it does not contain any pork and bread with yeast which they are forbidden to eat 3
- (b) Menu C is suitable for Jewish students because it does not contain pork and shellfish which they are forbidden to eat 3

4. Discussion with reference to how the following factors have contributed to Hong Kong's cosmopolitan food culture in the past two decades
- life style
 - health issues
 - food technology
 - environmental concern
 - economical globalization
 - scientific and technological developments

Mark allocation for content (12 marks)	Mark range
In-depth discussion of how the six factors influence Hong Kong's food culture. Discussion should include relevant examples to support the main points	10-12
Satisfactory discussion of how most of the factors influence the development of Hong Kong's food culture. Relevant examples given	7-9
Limited discussion of how most of the factors influence the development of Hong Kong's food culture. Examples are irrelevant	4-6
Briefly describes Hong Kong's contemporary/current food culture	1-3

Mark allocation for written communication (3 marks)	Mark
Clear and logical presentation of information with effective use of appropriate terminology	3
Structural presentation of information with some use of appropriate terminology	2
Simple presentation of ideas/points with limited use of appropriate terminology	1

15

Section B

5. - Eggs coagulate at high temperature and thus could be used for thickening liquid (2)
 Example: steamed custard/milk pudding (1)
- Air can be whisked into the egg white to hold air in the process of cake making thus providing a soft and spongy texture (2)
 Example: sponge cake (1)
6. - Food is usually blanched before canning to destroy enzymes (1)
- Food is packed into containers and sometimes with acids, salt, sugar and other chemical preservatives added. This helps to inhibit microbial or enzymatic activities (1)
- Cans are sterilized at high temperature to destroy moulds and harmful bacteria like *Clostridium botulinum* (1)

6

3

7. (a) as a control (1) for comparing with other samples
- (b) - potato (1)
- vinegar (1) 2
- (c) - The intensity of browning of Sample C (+) is much less than Sample B (+++++) after 60 minutes (1)
- Sample C is treated with lemon juice which is acidic with a low pH value (1)
- Enzymatic activities are inhibited, the browning inhibition is thus higher in Sample C than in Sample B (1)
- For Sample B, soaking in tap water for 5, 10 or 20 minutes only slows down browning but could not inhibit browning as tap water is not acidic (1) 4
8. (a) Any three of the following:
- cooking (1)
cook food thoroughly (i.e. core temperature at 75°C or above) (1)
- rapid chilling (1)
chill foods rapidly (e.g. within 90 minutes) at 4°C or below (1)
- distribution to Satellite Kitchens (1)
keep foods at 4°C or below during transportation (1)
- reheating (1)
reheat foods to core temperature at 75°C or above (1) 6
- (b) - Cooked hot foods are put into the blast chiller to be cooled down from 60°C or above to 4°C or below in 90 minutes (1)
- The time of chilling is short, such that pathogens do not have sufficient time to multiply to a health threatening amount (1)
- When the temperature of food reaches and is maintained at 4°C or below, multiplication of pathogens is slow (1) 3

9. Discussion with reference to how the following functions of food additives contribute to their wide use in food industries
- enhancing the safety and quality by the inhibition of microbial growth
 - extending the shelf-life by protection against any oxidative deterioration
 - enhancing the flavour and odour
 - stabilising or retaining the colour
 - improving the texture and consistency of food, etc

Mark allocation for content (12 marks)	Mark range
Provides in-depth discussion of how food additives are used in the food industry. Demonstrates extensive knowledge of a wide range of food additives that assist food industries in producing quality products. The discussion is well supported with appropriate examples	10-12
Satisfactory discussion of how food additives are used in the food industry. Demonstrates with examples some knowledge of how some food additives are used	7-9
Limited discussion of how food additives are widely used in the food industries. Answer can state the different types of additives as examples	4-6
Briefly describes the different types and functions of food additives with examples but not all are relevant	1-3

Mark allocation for written communication (3 marks)	Mark
Clear and logical presentation of information with effective use of appropriate terminology	3
Structural presentation of information with some use of appropriate terminology	2
Simple presentation of ideas/points with limited use of appropriate terminology	1

15

Section C

10. (a) (i) texture: crispy/brittle/dry/hard (1)
- (ii) flavour: strong/bland/salty/tasteless (1)
- (iii) appearance: attractive/crumby/mouthful size/burnt (1) 3
- (b) paired difference test (1)
- To find out if there is a difference in a specific attribute between two samples (1) 2
11. - product
- a snack of a soft texture suitable for all age groups of elderly people with low fat and low sugar content (1)
- price
- affordable, within HK\$3-5 for each piece/ packet (1)
- place
- to be sold at different types of shops e.g. convenience stores, supermarkets, etc (1)
- promotion
- highlight the nutritive value of the snack in relation to the needs of the elderly and use the 'Buy three get one free' tactic to promote sales in the first three months (1) 4

12. (a) - Such data helps marketing managers to predict the challenges they may face, and then plan their marketing strategies (1)
 - It is also useful to monitor the sales from time to time to compare with those products with similar life cycle (1)

2

- (b) Any three of the following:
 - From the period 2000 to 2002, the food item was at the introduction stage
 The food product was just launched on the market, not many consumers might be aware of this new product. It would take some time for consumers to familiarize themselves with the product and thus the sales volume at this stage was low (3)

- From the period 2003 to 2005, the food item was at the growth stage
 Sales started to grow in the growth period when more and more customers got to know the product and bought it subsequent to advertising strategies by the company (3)

- From the period 2006 to 2008, the food item was at the maturity stage
 Sales climbed to a peak at this stage. The sales volume was maintained at the higher end of the range. The company also provided varied styles or flavours under the same category of the food product (3)

- From the period 2008 to 2010 the sales of food item declined
 Sales volume decreased because of market saturation, change of customers' preference, competitors in the market introduced new food products (3)

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- (c) (i) - This product had already developed its brand loyalty (1)
 - Customers had developed the regular habit of using or having it (1)
 - Product had developed into a popular brand (1)

3

- (ii) - Company can do more by way of research and development for the old product with more health concern adjustments (1)
 - Use of different advertising strategies to introduce the product to people who are using the competitive product (1)

2

13. Discussion with reference to how current trends influence the direction of research and development of food products of a food manufacturing company
- emerging technology in food production, manufacturing and packaging
 - ecologically sustainable production methods
 - health-enhancing foods
 - food product marketing practices

Mark allocation for content (12 marks)	Mark range
Provides in-depth discussion of how the current market trends influence the research and development direction of food company. Demonstrates extensive knowledge of the current market trend. The discussion is well supported with appropriate examples	10-12
Satisfactory discussion of how the current market trends influence the research and development direction of food company. Demonstrates some knowledge of some examples of current market trends and food products	7-9
Limited discussion of how current market trends influence the research and development direction of food company. Answer can state the different types of food product as examples	4-6
Briefly describes how the current market trends influence the research and development direction of food company. Examples may not be relevant	1-3

Mark allocation for written communication (3 marks)	Mark
Clear and logical presentation of information with effective use of appropriate terminology	3
Structural presentation of information with some use of appropriate terminology	2
Simple presentation of ideas/points with limited use of appropriate terminology	1