

# OCR

Oxford Cambridge and RSA

## Monday 6 June 2016 – Afternoon

### GCSE DESIGN AND TECHNOLOGY Food Technology

#### A525/01 Sustainability and Technical Aspects of Designing and Making



Candidates answer on the Question Paper.

**OCR supplied materials:**

None

**Other materials required:**

None

**Duration:** 1 hour 30 minutes



|                       |  |                      |  |
|-----------------------|--|----------------------|--|
| Candidate<br>forename |  | Candidate<br>surname |  |
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|               |  |  |  |  |  |                  |  |  |  |  |
|---------------|--|--|--|--|--|------------------|--|--|--|--|
| Centre number |  |  |  |  |  | Candidate number |  |  |  |  |
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#### INSTRUCTIONS TO CANDIDATES

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions in Section A **and** Section B.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. If additional space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.
- Do **not** write in the bar codes.

#### INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is **80**.
- Your quality of written communication is assessed in the questions marked with an asterisk (\*).
- This document consists of **16** pages. Any blank pages are indicated.

## SECTION A

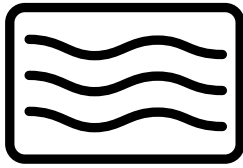
Answer **all** the questions.

You are advised to spend about 40 minutes on this section.

On questions 1 – 5 **circle** your answer.

- 1 An example of primary recycling is:
- (a) Using ice cream tubs to store dry ingredients
  - (b) Composting vegetables
  - (c) Using plastic bottles to make a fleece jacket
  - (d) Not eating leftover food
- [1]
- 2 Which of the following is **not** an example of a renewable energy source?
- (a) Solar Power
  - (b) Natural Gas
  - (c) Wind power
  - (d) Water
- [1]
- 3 Which colour chopping board should be used for preparing raw meat?
- (a) White
  - (b) Red
  - (c) Green
  - (d) Blue
- [1]
- 4 Life Cycle Analysis can be used by food designers to:
- (a) Cost a product
  - (b) Design a new fruit smoothie
  - (c) Understand the environmental impact of a product
  - (d) Grow plants
- [1]
- 5 We should be reducing the amount of processed food we eat because it is often high in:
- (a) Fat
  - (b) Fibre
  - (c) Protein
  - (d) Water-soluble vitamins
- [1]

6 The symbol shown stands for:



..... [1]

7 State **one** product that could be made from leftover cooked mashed potatoes.

..... [1]

8 Give **one** reason why consumers may choose to buy apples grown in the UK.

..... [1]

9 Give **one** reason why some parents do not give children foods containing artificial additives.

..... [1]

10 Give **one** environmental reason why manufacturers may choose to use card as a packaging material.

..... [1]

Decide whether the statements below are **true** or **false**.

Tick (✓) the box to show your answer.

|  | <b>True</b>              | <b>False</b>             |     |
|--|--------------------------|--------------------------|-----|
| 11 Glass cannot be recycled.                           | <input type="checkbox"/> | <input type="checkbox"/> | [1] |
| 12 Beetroot is in season in July in the UK.            | <input type="checkbox"/> | <input type="checkbox"/> | [1] |
| 13 We should be increasing the amount of sugar we eat. | <input type="checkbox"/> | <input type="checkbox"/> | [1] |
| 14 Stir-frying foods can help reduce energy costs.     | <input type="checkbox"/> | <input type="checkbox"/> | [1] |
| 15 A person's religion may affect what they eat.       | <input type="checkbox"/> | <input type="checkbox"/> | [1] |

16 Consumers are being encouraged to follow a healthier diet.

Read the case study below:

Mary is a 15-year-old student. She is overweight.  
She lives at home with her parents, who both work.  
Her interests are watching television and playing computer games.

Her typical day's diet would include:

**Breakfast** – white toast with butter and jam, orange squash.

**Morning break** – biscuit from the school canteen.

**Lunch** – cake or portion of chips with curry sauce from the local fish and chip shop.

**Home from school** – cake or a chocolate biscuit and a fizzy drink.

**Evening meal** – a shop-bought ready meal; Mary's favourites are stuffed-crust pizza or beef lasagne with garlic bread, followed by chocolate ice cream.

**Snack** – crisps, biscuits or cake and a fizzy drink or orange squash.

(a)\* Mary has been advised to change her diet in accordance with the government recommendations.

Explain the changes that could be made to improve Mary's diet.

[6]

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(b) Recipes can be adapted in different ways.

Fig. 1 is a recipe for a spaghetti bolognese.

|  |
|--|
| 250 g minced beef<br>50 g bacon<br>1 tablespoon oil<br>1 onion<br>1 small tin chopped tomatoes<br>1 tablespoon tomato purée<br>salt and pepper to taste<br>200 g white spaghetti<br>50 g parmesan cheese |
|--|

**Fig. 1**

Complete the chart to show **two** ways the spaghetti bolognese recipe can be adapted to reduce the fat and increase the fibre content.

| <b>Adaptation</b>          | <b>How this can be achieved</b> |
|----------------------------|---------------------------------|
| Reduce the fat content     | 1                               |
|                            | 2                               |
| Increase the fibre content | 1                               |
|                            | 2                               |

[4]

(c) Explain why consumers are encouraged to put the peelings from onions into a compost bin.

.....  
 ..... [2]

(d) The bolognese sauce could be cooked in a slow cooker or pressure cooker.

Give **two** reasons for using these pieces of equipment to cook food.

1 .....

.....

2 .....

.....

[2]

(e) Fig. 2 shows a symbol on the minced beef packaging.



Fig. 2

State why consumers choose to buy products with this symbol on the packaging.

..... [1]

(f) State the term used to show the date mark on the minced beef bought from the chiller cabinet.

..... [1]

(g) The spaghetti bolognese is to be manufactured as a cook chill product.

Explain **two** reasons why food manufacturers have to consider the amount of energy used in the production of the spaghetti bolognese.

1.....

.....

.....

.....

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2.....

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[4]

## SECTION B

Answer **all** the questions.

You are advised to spend 50 minutes on this section.

17 Many foods need to be stored in a refrigerator.

(a) Fig. 3 shows a refrigerator.

On the diagram below, match the following foods with the correct shelf position:

- raw meat
- cooked meat
- fresh tomatoes

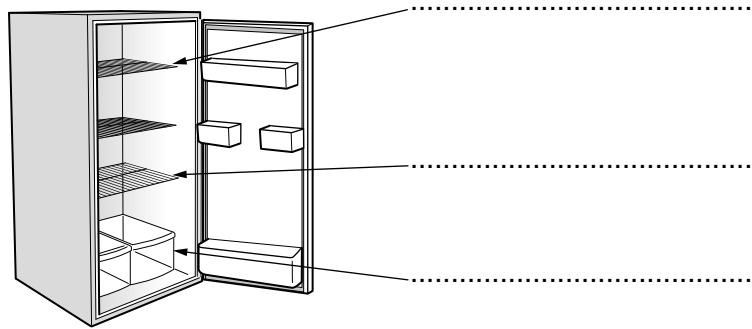


Fig. 3

[3]

(b) Food can be preserved to make it last longer.

Complete the table below to show **two** methods of preservation.

Give **one different** example of a food preserved by this method.

An example has been done for you.

| Method of preservation | Food preserved by this method |
|------------------------|-------------------------------|
| <i>Chilling</i>        | <i>Cooked meat</i>            |
|                        |                               |
|                        |                               |

[4]





(d) State **two** roles of the Environmental Health Officer.

1 .....

.....

2 .....

.....

[2]

18 It is important for consumers to maintain the correct energy balance.

(a) Describe what is meant by the term 'energy balance'.

.....

.....

..... [2]

(b) State **one** function of complex carbohydrates in the diet.

..... [1]

(c) A school canteen wants to sell an 'eat on the go' product for teenagers.

The design specification points for the product are:

- to be a savoury product
- to contain a complex carbohydrate food
- to contain protein foods
- to be attractive.

Use labelled sketches and / or notes to design a product that meets the design specification.

State clearly how your design meets the specification points.

**Do not draw any packaging.**

Name of the dish .....

[6]



19 We are being encouraged to eat more fish in our diet.

(a) State the recommended portions of fish we should eat in a week.

..... [1]

(b) Fig. 4 shows the nutrients found in 100g of different types of fish.

| Nutrient           | Prawns  | Mackerel | Cod     |
|--------------------|---------|----------|---------|
| Energy (kJ)        | 337 kJ  | 914 kJ   | 321 kJ  |
| Energy (kcal)      | 80 kcal | 220 kcal | 76 kcal |
| Fat                | 0.7 g   | 16 g     | 0.6 g   |
| Of which Saturates | <0.1 g  | 3.3 g    | 0.1 g   |
| Protein            | 18 g    | 19 g     | 18 g    |
| Salt               | 0.15 g  | 0.16 g   | 0.48 g  |

Fig. 4

(i) State which fish provides the most energy.

..... [1]

(ii) State which fish contains the least amount of fat.

..... [1]

(c) The mackerel contains fat-soluble vitamins.

Name **two** fat-soluble vitamins and state **one** of their functions in the diet.

Name of vitamin.....

Function in the diet .....

.....

Name of vitamin.....

Function in the diet .....

.....

[4]

(d) The mackerel contains omega 3 fatty acids.

Give **one** reason omega 3 fatty acids are important in our diet.

.....  
..... [1]

(e) White fish can be steamed.

(i) State the method of heat transference used when steaming.

..... [1]

(ii) Explain **one** reason why steaming is a suitable method of cooking white fish.

.....  
.....  
.....  
..... [2]

(f) Fig. 5 shows a box of fish fingers.

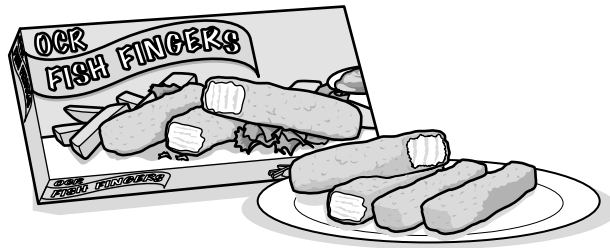


Fig. 5

Give **two** advantages of manufacturing the fish fingers by mass production.

1 .....

2 .....

..... [2]

(g) At the end of production, a number of fish fingers will be checked for quality.

State **two** quality control checks that will be carried out on the fish fingers.

1 .....

2 .....

..... [2]

**ADDITIONAL ANSWER SPACE**

If additional space is required, you should use the following lined page(s). The question number(s) must be clearly shown in the margin(s).

A large area of lined paper for writing. It consists of a vertical solid line on the left side, creating a margin. To the right of this line, there are numerous horizontal dotted lines spaced evenly down the page, providing a guide for handwriting.

A large area of the page is reserved for writing, featuring a vertical solid line on the left side and horizontal dotted lines extending across the page.



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