



Oxford Cambridge and RSA

Monday 4 June 2018 – Morning

AS GCE INFORMATION AND COMMUNICATION TECHNOLOGY

G061/01 Information, Systems and Applications



Candidates answer on the Question Paper.

OCR supplied materials:
None

Other materials required:
None

Duration: 2 hours



Candidate forename		Candidate 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.
- 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. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the barcodes.

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 **120**.
- 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.

Answer **all** the questions.

Doggie@Home provides kennels and looks after dogs when their owners are away.

1 A data capture form is filled out on the computer when a new dog is to stay at the kennels. The form contains details about the owner and the dog.

(a) Identify **one** characteristic of data.

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

(b) Use an example relevant to Doggie@Home to show how, through the application of context, structure and meaning, data can become information.

Data:
Context:
Structure:
Meaning: [4]

(c) Give **one** reason why the date of birth of the dog is stored on the form rather than its age.

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

(d) Identify **one** validation method. Use an example to describe how the dog's date of birth can be entered incorrectly but not generate an error message using this validation method.

Method:
Example:
.....
..... [3]

(e) The data needs to be verified.

(i) Describe what is meant by verification.

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

(ii) Identify **two** verification methods that could be used in the system.

1:
.....
2:
..... [2]

Question 2 begins on page 4

2 Doggie@Home has produced posters advertising the kennels which will be put up on the noticeboards at local veterinary practices.

(a) Describe **two advantages** of using pictures as a method of conveying information in the posters.

1:

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.....

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2:

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.....

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[4]

(b) Completeness and level of detail are two factors that affect the quality of information.

Describe, using examples that Doggie@Home could include in the poster, how these two factors are linked.

.....

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.....

.....

[3]

- 3* A dog's vaccination records and microchip information must be recorded on the system before it is allowed to stay at the kennels. This information is provided by the owners in paper form.

Identify an appropriate input device for performing the above task. Justify your choice of device.

The quality of written communication will be assessed in your answer to this question.

Device: [1]

Justification: [6]

- 4 Both hardware and software are used by Doggie@Home.

Using examples, describe the difference between hardware and software.

..... [4]

- 5 Doggie@Home has created a spreadsheet model showing the predicted income over a number of years.

Part of the income prediction model is shown below.

Kennel Income Prediction			
Number of kennels (one dog per kennel)	24		
Cost per dog per night	£8.99		
	2018	2019	2020
Average occupation per kennel over the year	72%	75%	80%
Number of days kennels occupied (rounded up to nearest whole number)	263	274	292
Total number of days	6312	6576	7008
Total income	£56,744.88	£59,118.24	£63,001.92

- (a) Describe **two advantages** of using a spreadsheet to model the predicted income.

1:

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2:

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.....

[4]

(b) The spreadsheet model makes use of variables and formulae.

Using examples from the income prediction model, describe what is meant by variable and formula.

Variable:

.....

.....

.....

Formula:

.....

.....

.....

[4]

(c) The spreadsheet model uses absolute and relative referencing.

Use examples from the income prediction model to describe what is meant by absolute and relative referencing.

Absolute:

.....

.....

.....

Relative:

.....

.....

.....

[4]

- 6 Doggie@Home currently uses a database with a single table to store details about the dogs, their bookings and their feeding routine.

Part of the table is shown below.

Dog Name	Breed	Type of Food	How Much Food	Meal	Days Staying
Beau	Bichon Frise	Dry biscuits	1/2 cup	Breakfast	3 days
Turpin	Chihuahua	Dry biscuits	1/4 cup	Breakfast	7 days
Beau	Bichon Frise	Wet tin	1/2 tin	Dinner	3 days
Henry	Cavapoo	Wet tin	1/2 tin	Dinner	Overnight
Turpin	Chihuahua	Treats	4 treats	Lunch	7 days
Turpin	Chihuahua	Raw chicken	1 thigh	Dinner	7 days
Monty	English Springer Spaniel	Steak	16 oz	Dinner	4 weeks

- (a) The data in the table is unnormalised (ONF) and needs to be normalised to third normal form (3NF).

- (i) Describe **two advantages** of normalising the table.

1:

.....

.....

.....

.....

2:

.....

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.....

[4]

- (ii) Describe **one disadvantage** of normalising the table.

.....

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.....

.....

[2]

(b) Identify **two** characteristics of data in first normal form (1NF).

1:

.....

2:

.....

[2]

(c) Give the most suitable data type for each of the following fields and state why you have chosen that data type.

Field	Data type	Why this data type has been chosen
Feeding time	
Weight of dog (kgs)	
Owner's postcode	

[6]

(d) Data type is one item that would be found in the data dictionary for the database.

Identify **three other** items that would be found in the data dictionary for the database.

1:

2:

3:

[3]

(e) A user interface is required for the database.

(i) What is meant by the letters WIMP in a wimp interface?

W:

I:

M:

P:

[2]

(ii) Identify **one other** type of suitable user interface for the database.

.....

..... [1]

(f) Describe **two advantages** of tailoring the user interface for the database.

1:

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.....

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2:

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.....

[4]

7 Doggie@Home has decided to create an advert to send to all customers offering discounts based on the length of time the dog stays with them.

Mail merge could be used to create the advert.

(a) Put the steps below in the correct order to create the advert. The first and last have been done for you.

- | | |
|---------------------------------|-------|
| Preview advert | _____ |
| Create data source | _____ |
| Insert merge fields into advert | _____ |
| Link advert to data source | _____ |
| Complete merge | _____ |
| Create advert | _____ |

[3]

(b) Describe **two advantages** of using a graphics library to select images to go on the advert.

1:

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2:

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[4]

(c) Describe **two disadvantages** of using mail merge to produce the advert.

1:

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.....

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2:

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.....

.....

[4]

8 A website is to be created to advertise Doggie@Home.

(a) A wizard can be used to create a basic website.

Describe **two advantages** of using a wizard to create the website.

1:
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.....

2:
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[4]

(b)* It has been decided to use the content from the advert on the website.

Evaluate the suitability of using bitmap graphics on the website.

The quality of written communication will be assessed in your answer to this question.

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[6]

(c) Identify **three** elements of a house style that could be used on the website.

- 1:
- 2:
- 3: [3]

(d) The website contains static and dynamic data.

(i) Describe what is meant by static data.

-
- [1]

(ii) Give **two** examples of static data that could appear on the website.

- 1:
-
- 2:
- [2]

(e) Doggie@Home has decided to provide a video feed of the dogs on the website so that owners can see their dogs.

Identify and explain **two** security measures that could be used to only allow the owners to view the video feed.

- 1:
-
-
-
-
- 2:
-
-
- [4]

9 The ICT facilities used by Doggie@Home are increasing and it is installing a network to link all the computers together.

(a) Describe **three advantages to staff** of networking the computers.

1:

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2:

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3:

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[6]

(b) A network manager has been employed to oversee the network at Doggie@Home.

The network manager is a member of the professional body, the British Computer Society (BCS).

Explain **two advantages to the network manager** of belonging to a professional body.

1:

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2:

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[4]

(c) Applications software is one type of software.

Identify **two other** types of software the network manager could use. For each type of software, give an example of how it could be used.

1:

Use:

.....

2:

Use:

.....

[4]

Question 10 begins on page 16

10 Describe **two** future developments in ICT that could be used to advertise Doggie@Home. For each development, explain an advantage of its use.

Development 1:
.....
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Advantage:
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Development 2:
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Advantage:
.....
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[8]

END OF QUESTION PAPER



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