

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS**  
**AS GCE**  
**G061/01**  
**INFORMATION AND COMMUNICATION**  
**TECHNOLOGY**  
**Information, Systems and Applications**  
**MONDAY 4 JUNE 2018: Morning**  
**DURATION: 2 hours**  
**plus your additional time allowance**  
**MODIFIED ENLARGED 24pt**

|                               |  |                              |  |
|-------------------------------|--|------------------------------|--|
| <b>Candidate<br/>forename</b> |  | <b>Candidate<br/>surname</b> |  |
| <b>Centre<br/>number</b>      |  |                              |  |
|                               |  |                              |  |
|                               |  |                              |  |
|                               |  |                              |  |
|                               |  |                              |  |
|                               |  |                              |  |
|                               |  |                              |  |
|                               |  |                              |  |
|                               |  |                              |  |

**Candidates answer on the Question Paper.**

**OCR SUPPLIED MATERIALS:**  
**None**

**OTHER MATERIALS REQUIRED:**  
**None**

**READ INSTRUCTIONS OVERLEAF**



## **INSTRUCTIONS TO CANDIDATES**

**Write your name, centre number and candidate number on the front page. 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).**

## **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 (\*).**

**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]**

**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:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**[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.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**[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:** \_\_\_\_\_

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[6]

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

Using examples, describe the difference between hardware and software.

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[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<br>(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:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**[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.**

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

**(a) The data in the table is unnormalised (0NF) and needs to be normalised to third normal form (3NF).**

**(i) Describe TWO ADVANTAGES of normalising the table.**

**1:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ **[4]**

**(ii) Describe ONE DISADVANTAGE of normalising the table.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_ **[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. [6]**

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

**(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:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**[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. [3]

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

(b) Describe TWO ADVANTAGES of using a graphics library to select images to go on the advert.

1:

2:

[4]

**(c) Describe TWO DISADVANTAGES of using mail merge to produce the advert.**

**1:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**[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:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**2:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**[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.**

[illegible]

**(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: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

2: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

[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:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**[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]**

**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:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Advantage:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Development 2:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Advantage:** \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**[8]**

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