OCR
Oxford Cambridge and RSA

Monday 5 June 2017 – Morning

AS GCE INFORMATION AND COMMUNICATION TECHNOLOGY

G061/01 Information, Systems and Applications

Duration: 2 hours

Candidate forename		Candidate surname	

Centre number					Candidate number				

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**.
- Quality of written communication will be assessed in questions marked with an asterisk (*).
- This document consists of **20** pages. Any blank pages are indicated.

Answer **all** the questions.

Learn@OCR is a small company that teaches people how to drive.

1 Learn@OCR is updating its advertising materials and is looking to create an advert to go on the World Wide Web.

(a) Compare the use of text and videos in the advert.

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.... **[4]**

(b) Learn@OCR wants to use pictures in the advert.

Describe **two disadvantages** of using clipart images in the advert.

1: ....

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2: ....

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....

[4]

(c) The advert can contain both static and dynamic data.

Describe the terms static and dynamic data and give an example of each that could be used in the advert.

Static: ....

....

Example: ....

....

Dynamic: ....

....

Example: ....

....
[4]

(d) One of the costs of creating the advert for the website is software.

Identify and describe **two other** costs that Learn@OCR could incur when creating the advert.

1: ....

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....

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2: ....

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....
[4]

Turn over

2 Not all prospective customers have access to the website and Learn@OCR wants to create an A4 portrait paper flyer.

(a)* Learn@OCR has decided to use desktop publisher software (DTP) to create the flyer.

Justify the use of DTP software for this task.

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.... **[6]**

(b) Learn@OCR has a large collection of photographs and wants to select one to go into the flyer.

(i) All the photographs can be viewed as thumbnail images.

Describe what is meant by a thumbnail image.

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.... **[2]**

(ii) Describe **one advantage** of using thumbnail images to select the photograph for the flyer.

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.... **[2]**

(c) (i) Describe the following characteristics of documents that could be used in the flyer.

Section: ....

....

....

....

Frame: ....

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....

[4]

(ii) For each of the following, give an example of how it could be used in the flyer.

Section: ....

....

Frame: ....

....

[2]

(d) Several members of staff have created different aspects of the flyer and saved them as separate files with different file types.

Explain **two advantages** of having different file types.

1: ....

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2: ....

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....

[4]

(e) Learn@OCR wants to create an A5 portrait version of the flyer.

One change Learn@OCR could make is to change the font size.

Identify **three other** changes that could be made to the flyer, to make it fit on one side of A5 without altering the content.

1: ....

....

2: ....

....

3: ....

....

[3]

3 Each flyer has a unique code number. Customer can give the code number to claim money off driving lessons.

The 7 digit code number has an extra digit on the right. This is the check digit.

Digit position	1	2	3	4	5	6	7	8 (Check digit)
Digit								

The check digit is calculated as follows:
- each digit is multiplied by its digit position;
- the results from the seven multiplications are added together;
- the total is divided by 11;
- the remainder is subtracted from 11;
- the result is the check digit (if the remainder is 10, then the check digit is X).

(a) A voucher number has been entered **without** its check digit.

Calculate the value of the check digit for the following voucher number. Show all your working.

2   2   4   4   4   4   4

The check digit is: .... **[3]**

(b) The following voucher number has been entered:

<div align="center">

1   3   3   5   6   8   4   X

</div>

Explain whether the check digit is correct and the voucher number has been entered in correctly.

....

....

....

.... **[2]**

4 Learn@OCR has a form on the website that prospective customers can fill in and submit to request additional information.

Some of the information on the form is encoded.

(a) What is meant by the term encoding?

....

.... **[1]**

(b) Describe **one disadvantage** of encoding the data on the submitted form.

....

....

....

.... **[2]**

(c) (i) Identify **one** verification method that could be used on the submitted data.

....

.... **[1]**

(ii) Use an example to describe how the prospective customer's surname can be entered incorrectly but still pass this verification method.

....

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....

.... **[2]**

5 Learn@OCR has been asked to give a presentation to a local school on how to be a safer driver.

(a) Describe how a master slide can be used to ensure that all the slides in the presentation are consistent.

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.... **[4]**

(b) Learn@OCR could use manual or automatic transition on the presentation.

Describe **two advantages** of using manual transition to deliver the presentation.

1: ....

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2: ....

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....
[4]

6 Due to the success of its website advert and presentation, Learn@OCR needs to expand to cope with the new business.

Learn@OCR has created a spreadsheet model to investigate the financial impact of purchasing more cars and hiring new instructors.
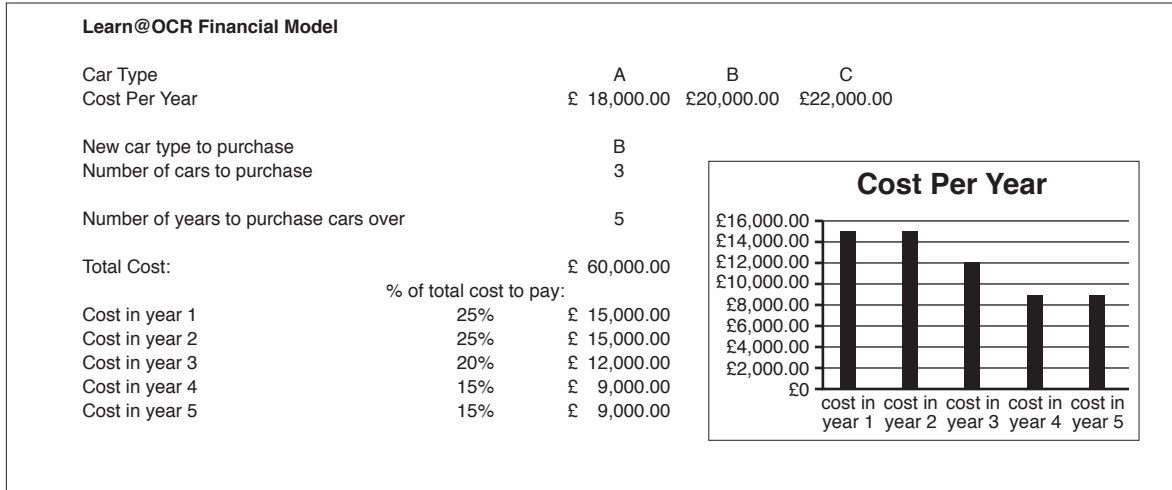
Part of the model is shown below in **Fig. 1**:

Fig. 1

(a) Describe **two advantages** to Learn@OCR of using a spreadsheet model to answer 'what-if?' questions.

1: ....

....

....

....

2: ....

....

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....

[4]

Turn over

(b) The spreadsheet model in **Fig. 1** makes use of functions and variables.

Describe what is meant by a function and a variable and give an example of each from the model in **Fig. 1**.

Function: ....

....

Example: ....

....

Variable: ....

....

Example: ....

....

[4]

(c) The spreadsheet model in **Fig. 1** uses relative referencing.

Use examples from the spreadsheet model in **Fig. 1** to describe what is meant by relative referencing.

....

....

....

.... **[2]**

(d) Describe **one** way that a range has been used in the spreadsheet model in **Fig. 1**.

....

....

....

.... **[2]**

7 As part of the expansion of the business, Learn@OCR has taken over a competitor.

The competitor used a different computer system to Learn@OCR and there have been difficulties transferring the files.

Explain how the lack of standardisation between systems could affect Learn@OCR.

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.... **[4]**

Turn over

8 As part of the expansion of the business, Learn@OCR is employing new office based staff. One of the new staff has a physical disability and is unable to use their arms.

(a) Describe **two specialist hardware** devices Learn@OCR could purchase to assist the new member of staff.

1: ....

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....

....

2: ....

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[4]

(b) Describe **two specialist pieces of software** Learn@OCR could install to assist the new member of staff.

1: ....

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....

2: ....

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....

....

[4]

9 Learn@OCR is concerned about the working environment.

Identify **two** safety problems related to working with ICT that office based staff at Learn@OCR might encounter.

For each safety problem, give an appropriate solution.

1: ....

....

Solution: ....

....

2: ....

....

Solution: ....

....

[4]

10 Learn@OCR is creating a new booking database system to cope with the increase in customers.

(a) The entities in the database are:
- CUSTOMER: details of the student for the lesson.
- VEHICLE: details of the vehicle that is used for the lesson. An instructor can use any vehicle that is free.
- INSTRUCTOR: details of the driving instructor who will take the lesson.
- LESSON: details about the lesson.

Create the entity relationship diagram (ERD), identifying the degree of the relationship between the entities.

[4]

(b) The data dictionary contains identification of the field names and data types.

Identify **two other** components of the data dictionary for the new booking database system.

1: ....

....

2: ....

....

[2]

(c) The new booking database system needs normalising.

Describe **two advantages** of normalising the new booking database system.

1: ....

....

....

....

2: ....

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[4]

(d) Give the most suitable data type for each of the following fields:

Field	Data Type
Mobile Number	
Passed Theory Test?	

[2]

(e) Buttons are one type of form control that could be used to customise the form interface for the booking system.

Use examples to describe how **two other** form controls could be used to customise the form interface for the new booking database system.

1: ....

....

....

....

2: ....

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[4]

11 The computer system that Learn@OCR uses has evolved and grown since the takeover. Learn@OCR has advertised for a network manager to join the company.

(a) Many of the applicants have highlighted the fact they are a member of a professional body, such as the BCS.

Describe the **purpose** of a professional body, such as the BCS.

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.... **[4]**

(b) The new network manager has installed a variety of utilities on the computers.

Identify **two** utilities that could be installed.

1: ....

....

2: ....

....

[2]

12 All of the cars at Learn@OCR have GPS tracking systems installed. This allows Learn@OCR to know the location of its cars.

Describe **two** software based security measures that could be implemented to prevent unauthorised users accessing the data from the GPS tracking system.

1: ....

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2: ....

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[4]

13 Describe **two** future developments in ICT that could be used in vehicles. For each development explain an advantage of its use.

1: ....

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....

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Advantage: ....

....

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2: ....

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Advantage: ....

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[8]

END OF QUESTION PAPER

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