

Tuesday 11 June 2013 – Afternoon

A2 GCE INFORMATION AND COMMUNICATION TECHNOLOGY

G063/01 Systems, Applications and Implications



Candidates answer on the Question Paper.

OCR supplied materials:

None

Other materials required:

None

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 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 **120**, of which marks are allocated to the assessment of the quality of written communication where an answer requires a piece of extended writing. These questions are marked with an asterisk (*).
- This document consists of **20** pages. Any blank pages are indicated.

SECTION A

Answer **all** questions

- 1 (a) The systems life cycle has many different stages.

- (i) Describe **two** different activities that could occur during the design stage.

1

.....

.....

2

.....

.....

[4]

- (ii) Describe **two** roles of the project manager within a project team.

1

.....

.....

2

.....

.....

[4]

- (b) Identify and give the use of **two** hardware items that could be found in a system specification.

1

.....

.....

2

.....

.....

.....

[4]

- (c) Describe the relationship between the investigation and analysis stage and the evaluation stage.

.....

.....

.....

.....

[2]

- 2 Explain the importance of a test plan when testing a system.

.....

.....

.....

.....

.....

.....

.....

.....

[4]

- 3 Evaluate the impact on broadcasters of digital television.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[6]

- 4 One of the main principles of the Data Protection Act (1998) is:

'Personal data shall be processed in accordance with the rights of data subjects under this Act.'

Explain the implications for a company of meeting this principle.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[6]

Question 5 begins on page 6

- 5 Identify the most suitable **type** of operating system and describe **one** feature that makes it suitable for use in each of the following situations.

Producing mobile telephone bills for customers each month.

.....
.....
.....
.....
.....
..... [3]

A computer system for booking airline tickets.

.....
.....
.....
.....
.....
.....
.....
..... [3]

- 6 Explain how colour should be used when designing a Human-Computer Interface (HCI).

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
..... [4]

SECTION B

Answer **all** questions

Questions 7–16 concern a school.

Students and staff at a school have well equipped, networked IT facilities including internet access and a school intranet.

- 7 Explain **three** problems the students could encounter when using the internet to research a school project.

1

.....

.....

2

.....

.....

3

.....

.....

[6]

- 8 (a) The school has an intranet and an extranet that its students can use.

Describe the purpose of an extranet.

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

- (b) Compare the school's intranet to its extranet.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
..... [4]

- 9 (a) The school's network manager is concerned about the available bandwidth across the network.

Explain **one** reason why it is important to have sufficient bandwidth when transmitting data across the network.

.....
.....
.....
.....

[2]

- (b) Explain **two** ways in which protocols are used to enable communication between network devices.

1

.....
.....
.....

2

.....
.....
.....

[4]

Question 10 begins on page 10

10

10 The school runs a client-server network.

(a) Describe what is meant by a client-server network.

.....
.....
.....
.....

[2]

(b) Describe **two** advantages of using a client-server network in a school environment.

1

.....
.....
.....
.....

2

.....
.....
.....
.....

[4]

- (c) One of the students would like to create a network at home and has the choice of a wired or a wireless network.

Justify the choice of using wireless access points to create the network.

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

[6]

Question 11 begins on page 12

12

11 The school requires a system that will allow the students to access their school work from home.

(a) Explain **three** implications of selecting a custom-written solution for the new system.

1

.....

.....

2

.....

.....

3

.....

.....

[6]

- (b)** Explain, using an example, how a potential user's perception could affect the design of the system's interface.

.....
.....
.....
.....
.....
.....
.....

[3]

- (c)** When would adaptive maintenance be needed on the system?

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

[4]

- 12 The school is investigating upgrading the word processor, spreadsheet and presentation software that the students and staff use.

(a) Explain **two** factors which could affect the decision about whether to upgrade.

1

.....

.....

2

.....

.....

[4]

(b) Describe **two** advantages of using computer-based training software to learn how to use new software packages.

1

.....

.....

2

.....

.....

[4]

- 13** Staff in the school transfer documents between home and school using memory sticks. The data on the memory sticks is encrypted.

Justify the use of encryption to keep the data secure.

[6]

Question 14 begins on page 16

- 14 A new school building is going to be constructed. Spreadsheets are being used to model the costs for the new building.

Evaluate the use of spreadsheets for modelling the costs of the new building.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

[6]

- 15 The tasks that need to be completed to construct the new building are given in the table below. The construction is due to start on the 2 January 2014.

| Task Number | Task | Duration | Predecessor |
|--------------------|----------------------------|-----------------|--------------------|
| 1 | Foundations and drainage | 2 weeks | |
| 2 | Steel frame | 2 weeks | 1 |
| 3 | Brickwork and roof | 3 weeks | 2 |
| 4 | External windows and doors | 1 week | 3 |
| 5 | Internal works | 2 weeks | 3 |
| 6 | Decoration | 1 week | 5 |
| 7 | Fixtures and fittings | 1 week | 6 |
| 8 | Building inspection | 2 days | 3 |

Create a Gantt chart using the above plan of tasks.

[6]

PLEASE TURN OVER FOR THE LAST QUESTION

- 16*** Discuss hardware and software developments that are changing, or might change, the way a student learns.

The quality of written communication will be assessed in the answer to this question. [11]

END OF QUESTION PAPER

PLEASE DO NOT WRITE ON THIS PAGE



Copyright Information

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website (www.ocr.org.uk) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.