

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
A2 GCE**

G063/01

**INFORMATION AND COMMUNICATION
TECHNOLOGY**

**ICT Systems, Applications
and Implications**

WEDNESDAY 22 June 2016: Morning

**DURATION: 2 hours
plus your additional time allowance**

MODIFIED ENLARGED

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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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 in the boxes on the first 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.

Quality of written communication will be assessed in questions marked with an asterisk (*).

Any blank pages are indicated.

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SECTION A

Answer ALL the questions.

- 1 Identify TWO items of documentation produced during the documentation stage of the systems life cycle and describe the purpose of each.**

1 _____

Purpose _____

2 _____

Purpose _____

[6]

2 Describe how prototyping could be used to develop an application.

[4]

3 Describe TWO characteristics of a real time operating system that make it suitable for controlling an aeroplane's autopilot system.

1

2

[4]

4 Compare the use of a cellular mobile phone with the use of a satellite mobile phone.

[4]

[illegible]

6 Describe the purpose of the THREE COMPONENTS of an expert system.

1 _____

2 _____

3 _____

[6]

7 Describe TWO DISADVANTAGES of using a parallel changeover strategy for installing a new reporting system in a school.

1 _____

2 _____

[4]

[6]

SECTION B

Answer ALL the questions.

QUESTIONS 9 TO 14 concern ABC Homes which is a large company that specialises in building luxury homes.

9 ABC Homes has a headquarters in London. The headquarters is based in several different buildings. ABC Homes also has a number of regional offices throughout the UK.

(a) ABC Homes runs both Local Area Networks (LANs) and virtual networks.

Compare the characteristics of a LAN with the characteristics of a virtual network.

[4]

(b) ABC Homes has fibre optic connections between the different buildings at its headquarters. It also has wireless access points installed in each building.

(i) Describe TWO advantages of using fibre optics to connect the different buildings together.

1 _____

2 _____

[4]

(ii) Describe TWO advantages of using wireless communication within each building.

1 _____

2 _____

[4]

(c) ABC Homes plans to host its own website from its headquarters.

Describe TWO advantages to ABC Homes of having a leased line internet connection.

1 _____

2 _____

[4]

10 ABC Homes installs home automation systems that control lighting, heating and security in the homes it builds. It has commissioned a custom written software application. The application will allow the devices to be controlled remotely through the use of a smartphone or tablet computer.

(a) (i) A design specification is produced for the application.

State the purpose of the design specification.

_____ **[1]**

(ii) Identify THREE items that should be included in the design specification.

1 _____

2 _____

3 _____

[3]

- (b) The human computer interface for the application includes a forms-based dialogue.**

Evaluate the use of a forms-based dialogue for this application.

[illegible]

(c) Explain why the designer should consider a user's mental model when designing the application.

[4]

(d) Describe how a tester in the project team tests the application.

[4]

(a) Evaluate the choice of using a central database with remote local indexes across the regional offices.

[6]

(b) Identify TWO DIFFERENT SECURITY issues relating to distributed databases. Describe how EACH issue can be overcome.

1 _____

2 _____

[4]

12 ABC Homes uses an off-the-shelf package to design new homes for its customers.

(a) Describe TWO ways in which a computer model of the house could be used by the company.

1 _____

2 _____

[4]

(b) Describe TWO DISADVANTAGES to ABC Homes of using an off-the-shelf package.

1 _____

2 _____

[4]

(c) The management of ABC Homes has decided to replace the off-the-shelf package.

Explain why it will be important to consult with employees when deciding on its replacement.

[6]

13 Explain the impacts that upgrading the operating system on all of its computers might have on ABC Homes.

[11]

[illegible]

[illegible]

14* Identify ONE hardware OR software development that could impact on the personal privacy of the staff who work for ABC Homes.

Discuss how the development you have identified above could impact on the personal privacy of the staff who work for ABC Homes.

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

Chosen hardware or software development

END OF QUESTION PAPER

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