

# Wednesday 22 June 2016 - Morning

## A2 GCE INFORMATION AND COMMUNICATION TECHNOLOGY

**G063/01** ICT Systems, Applications and Implications

Candidates answer on the Question Paper.

OCR supplied materials:

None

Other materials required:

None

**Duration:** 2 hours



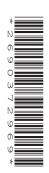
Candidate forename				Candidate surname			
Centre numb	er			Candidate nu	ımber		

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



# **SECTION A**

# Answer **all** the questions.

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			l to develop an	application.	
Describe how	, prototypina d	coula be used	· · · · · · · · · · · · · · · · · · ·		
Describe how	prototyping o	could be used			

3	Describe <b>two</b> characteristics of a real time operating system that make it suitable for controlling aeroplane's autopilot system.	g an
	1	
	2	
		[4]
4	Compare the use of a cellular mobile phone with the use of a satellite mobile phone.	
		. [4]

	•••••	•••••			•••••	•••••	•••••	 	• • • •
								 •••••	
Descri	ibe the pu	rpose of tl	he <b>three</b>	compon	<b>ents</b> of a	n expert	system.		
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### **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		C Homes has a headquarters in London. The headquarters is based in several different dings. 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)		C Homes has fibre optic connections between the different buildings at its headquarters. It has wireless access points installed in each building.						
	(i)	Describe <b>two</b> advantages of using fibre optics to connect the different buildings together.						
		1						
		2						
	<b>/11</b> \	[4]						
	(ii)	Describe <b>two</b> advantages of using wireless communication within each building.						
		1						
		2						
		[41						

(c)	ABC Homes plans to host its own website from its headquarters.
	Describe <b>two</b> advantages to ABC Homes of having a leased line internet connection.
	1
	2
	[4]

10	hon	nes i	mes installs home automation systems that control lighting, heating and security in the builds. It has commissioned a custom written software application. The application will 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 <b>three</b> 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.
		Eva	luate the use of a forms-based dialogue for this application.
			F01
			[6]

(c)	Explain why application.	the design	er should	consider a	a user's	mental	model	when	designing	the
										. [4]
(d)	Describe how	a tester in t	he project	team tests	the appli	cation.				
										. [4]

11	ABO	C Homes operates a distributed database across its regional offices throughout the UK.
	(a)	Evaluate the choice of using a central database with remote local indexes across the regional offices.
		[6]
	(b)	Identify <b>two different security</b> issues relating to distributed databases. Describe how <b>each</b> issue can be overcome.
		1
		2
		[4]

12	ABO	C Homes uses an off-the-shelf package to design new homes for its customers.	
	(a)	Describe <b>two</b> ways in which a computer model of the house could be used by the compa	any.
		1	
		2	
			[4]
	(h)	Describe <b>two disadvantages</b> to ABC Homes of using an off-the-shelf package.	١٠,
	(D)		
		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.						
	rea						

		1	4			
Explain the impac ABC Homes.	ts that upgradi	ng the opera	iting system	on all of its	computers r	night have o
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		 •••••	

Question 14 begins on page 16

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14\* Identify **one** hardware **or** software development that 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 que	estion. [11]
Chosen hardware or software development	

**END OF QUESTION PAPER** 

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# 19

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