Centre Number	Candidate Number	
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Surname

Other Names

New GCSE

4341/01

COMPUTER SCIENCE

UNIT 1: Understanding Computer Science

P.M. THURSDAY, 12 June 2014

1 hour 30 minutes

For Examine	er's use only
Total	

INSTRUCTIONS TO CANDIDATES

Use black ink or black ball-point pen. Do not use pencil or gel pen. Do not use correction fluid. Answer **all** questions.

Write your answers in the spaces provided in this booklet.

If you run out of space, use the continuation page at the back of the booklet, taking care to number the question(s) correctly.

INFORMATION FOR CANDIDATES

The number of marks is given in brackets at the end of each question or part-question. Quality of written communication will be assessed in question **16**.



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			٦,
		Answer all questions.	
1.	Tick (/) the correct boxes below storage media.	to show which four of the following items are secondary [4]	
	External hard disk drive		
	DVD	2	
	Cache	3	
	Network interface card		
	Solid state hard drive	5	
	USB flash memory stick		
	ROM		
		8	



2. A tablet computer has many methods for data input and output.



For **each** of the items listed below, **tick** (/) the correct box to show if they are used for:

- Input only
- Output only
- Input and output
- Not used for input or output

[6]

Item	Input only	Output only	Input and output	Not used for input or output
Microphone				
Volume button				
Touch screen				
Speaker				
Memory card				
Camera				



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3.	A la _l 8 gig	ptop computer is supplied with a 5GHz dual-core central processing unit (CPU) abytes of RAM.	and
	(a)	Briefly explain how a computer makes use of RAM.	[2]
	(b)	Give a reason why a computer with 8 gigabytes of RAM could run several large progr faster than a computer with 2 gigabytes of RAM.	ams [2]
	(c)	Describe what is meant by a <i>dual-core</i> CPU. State a possible benefit of its use.	[2]
	(d)	Describe what is meant by the term 5GHz.	[2]



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4.	There are many	different types of	of network topology,	of which Bus and	I Star are types.
----	----------------	--------------------	----------------------	------------------	-------------------

(a) Draw a diagram of a Star topology network clearly labelling all important hardware. [3]



(b)	Star topology networks are more commonly used than Bus topology networks. Give two advantages and two disadvantages of a Star topology network compared to a But topology network.
Adva	ntages:
•••••	
•••••	
Disa	dvantages:



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5.	(a)	State the role of <i>virus checker</i> software and identify three typical functions carried out this software.	оу 4]
	•••••		
	•••••		
	•••••		
	•••••		
	(b)	State the role of firewall software and identify three typical functions carried out by firewa	all
			4]
			4]
		software installed on a network.	4]
		software installed on a network.	4]



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6.	An estate agent stores details about the properties for	sale on a computer system.
	For each of the following items name the most suitable	le data type:
	the number of bedrooms	[1]
	the postcode of the property	[1]
	whether the property is still for sale (e.g. TRUE)	[1]
	the council tax band (e.g. A, B, C)	[1]
7.	Describe the role of a <i>Domain Name System (DNS)</i> ser to access a web site such as www.wjec.co.uk when typ	rver and explain, in detail , how it is used bed into a web browser. [4]



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Describe the feature system.	es of a <i>Graphical</i>	User Interface	(GUI) that are p	rovided by the o	operating [5]
					············
					••••••



State the effect that compression has on the file.
State two advantages for the social networking website of using compressed photographies.
A professional photographer uses a <i>lossless compression algorithm</i> when upload photograph files to his website for customers to download and print. Briefly describe why a lossless compression algorithm is the most suitable in
situation.



Com	puter programs can contain different types of <i>error</i> .	Exa o
(a)	Giving an example, state what is meant by a syntax error.	[2]
(b)	Giving an example, state what is meant by a run time error.	[2]
(c)	Giving an example, state what is meant by a <i>logical error</i> .	[2]
	(a)	(b) Giving an example, state what is meant by a run time error.



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only

		State the number of bytes in	n a kilobyte		
		State the number of kilobyte	es in a megabyte		
	(b)	Complete the following truth True in the last column.	n table, for the logical OR op	eration, by writing eith	er False
		Α	В	A OR B	
		True	True		
		True	False		
		False	True		
		False	False		
	chara	acters are represented in com acters are ASCII and the Union e one advantage of using Union	code Standard.	methods. Two method	ds of stor
	State	acters are ASCII and the Unio	code Standard.	methods. Two method	ds of stor
-	State	acters are ASCII and the Union of the Union	code Standard.	methods. Two method	ds of stor
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Below	is an algorithm.	
	set counter = 0 output "Before the loop"	
	output Before the loop	
	repeat	
	set counter = counter + 1 output "Count is" counter	
	until counter = 3	
	output "Loop has ended"	
Write o	down all the outputs produced by the algorit	nm. [
•••••		



. ((a)	Convert the hexadecimal number 3C to binary.	[2]	Exar or
	(b)	Convert the hexadecimal number 3C to denary.	[2]	
((c)	Convert the binary number 11110111 to hexadecimal.	[2]	
	(d)	Explain why hexadecimal numbers are often used to represent binary numbers.	[2]	



State a quitable use for the following protection	E:
State a suitable use for the following protocols: HTTP (Hypertext Transfer Protocol)	[1]
FTP (File Transfer Protocol)	[1]
SMTP (Simple Mail Transfer Protocol)	[1]



		=>
16.	A software company has employed several new members of staff. As part of their initial training, the company wants to make sure that they are aware of current legislation relevant to computing.	
	You have been asked to inform the new employees about their responsibilities under:	
	 The Data Protection Act The Computer Misuse Act The Copyright, Designs and Patents Act 	
	Write a clear set of guidelines for the new employees. [12]	
	Quality of written communication will be assessed in this question.	



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Question number	Additional page, if required. Write the question number(s) in the left-hand margin.	Examiner only

