

Centre No.						Paper Reference						Surname	Initial(s)	
Candidate No.						1	1	8	5	/	2	H	Signature	

Paper Reference(s)

1185/2H

Edexcel GCSE (Full Course)

Information & Communication

Technology

Paper 2H

Higher Tier

Tuesday 19 May 2009 – Afternoon

Time: 2 hours

Examiner's use only

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Team Leader's use only

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Question Number	Leave Blank
A	
B1	
B2	
B3	
B4	
B5	
C1	
C2	
C3	
C4	
Total	

Materials required for examination
Nil

Items included with question papers
Case Study

Instructions to Candidates

In the boxes above, write your centre number, candidate number, your surname, initials and signature. Check that you have the correct question paper.

Answer ALL the questions. Write your answers in the spaces provided in this question paper.

For Section A: Do not use pencil. Use blue or black ink. For each question, choose an answer and put a cross in the box (☒). Mark only one answer for each question. If you change your mind about an answer, put a line through the box (☒) and then mark your new answer with a cross (☒).

Write your answers to Section B and Section C in the spaces provided.

Do not return the Case Study with the question paper.

Information for Candidates

The marks for individual questions and the parts of questions are shown in round brackets: e.g. (2). You will be awarded up to 6 marks for quality of written communication.

This paper has 20 questions in Section A, 5 questions in Section B and 4 questions in Section C. Section B contains questions on the Case Study. The total mark for this paper is 126.

There are 24 pages in this question paper. Any blank pages are indicated.

Advice to Candidates

You are reminded of the importance of clear English and careful presentation in your answers. Show all stages in any calculations and state the units.

Include diagrams where these are helpful.

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Turn over

SECTION A

Answer ALL questions.

For each question, choose an answer A, B, C or D and put a cross in the box. Mark only one answer for each question. If you change your mind, put a line through the box and then mark your new answer with a cross.

eg: Mark the box like this:

<input type="checkbox"/> A
<input type="checkbox"/> B
<input checked="" type="checkbox"/> C <i>This shows your answer</i>
<input type="checkbox"/> D

If you change your mind, mark the boxes like this:

<input checked="" type="checkbox"/> A <i>This shows your final answer</i>
<input type="checkbox"/> B
<input checked="" type="checkbox"/> C <i>First answer</i>
<input type="checkbox"/> D

1. Operating systems that can run more than one program at a time are known as

- A multi tasking
- B utility programs
- C networking
- D multi system

(Total 1 mark)

Q1

2. The Act introduced to make hacking illegal is the

- A Data Protection Act
- B Copyright, Designs and Patents Act
- C Computer Misuse Act
- D Hacking Protection Act

(Total 1 mark)

Q2

3. The correct order for the data capture process is

- A collection, preparation, input, verification
- B verification, preparation, collection, input
- C preparation, input, collection, verification
- D collection, input, preparation, verification

(Total 1 mark)

Q3



4. Which one of these is **not** an optical storage medium?

- A CD-R
- B CD-ROM
- C USB pen drive
- D DVD

(Total 1 mark)

Q4

5. ROM and RAM are both types of computer memory. Identify the correct row in the table

	ROM	RAM
<input type="checkbox"/> A	volatile memory	volatile memory
<input type="checkbox"/> B	volatile memory	permanent memory
<input type="checkbox"/> C	permanent memory	volatile memory
<input type="checkbox"/> D	permanent memory	permanent memory

(Total 1 mark)

Q5

6. Customers buying goods on the internet can pay by credit card. The process of transferring money in this way is known as

- A EFT
- B COM
- C BACS
- D FAST

(Total 1 mark)

Q6

7. Which one of these is **not** an operating system utility program?

- A backup
- B print manager
- C file renaming
- D file saving

(Total 1 mark)

Q7



8. Pilots are trained to fly aeroplanes using flight simulators. Which of the statements is **not** true for a flight simulator?

- A a variety of weather conditions can be simulated
- B it is cheaper than flying real aeroplanes
- C all conditions can be simulated accurately
- D trainees are put in less danger

Q8

(Total 1 mark)

9. A school has a filtering system on its network. They have done this to prevent

- A pupils accessing inappropriate sites
- B hackers gaining access to pupils' work
- C viruses entering the system
- D pupils e-mailing each other

Q9

(Total 1 mark)

10. The factors that should be considered when establishing the backup strategy for a computer system are

- A frequency, quality of data, media, time needed
- B frequency, quality of data, quantity of data, media
- C frequency, quantity of data, media, time needed
- D quality of data, quantity of data, media, time needed

Q10

(Total 1 mark)

11. The term used to describe a cell reference which stays the same as it is copied down a spreadsheet column is

- A relative
- B fixed
- C absolute
- D formatted

Q11

(Total 1 mark)



12. Bitmap and vector are both types of graphics files.
Identify the row in the table that correctly describes a feature of each.

	Bitmap	Vector
<input type="checkbox"/> A	rescaling produces jagged images	large file size
<input type="checkbox"/> B	small file size	rescaling produces jagged images
<input type="checkbox"/> C	rescaling produces jagged images	small file size
<input type="checkbox"/> D	large file size	rescaling produces jagged images

Q12

(Total 1 mark)

13. The term algorithm is used to describe

- A a series of commands written to solve a problem
- B the main aspects of systems analysis
- C a function of database software
- D a system flowchart

Q13

(Total 1 mark)

14. Which one of these is **not** a role of the central processing unit?

- A storing data
- B handling control signals
- C performing arithmetic operations
- D monitoring system performance

Q14

(Total 1 mark)

15. The ALU is part of the central processing unit.
ALU stands for

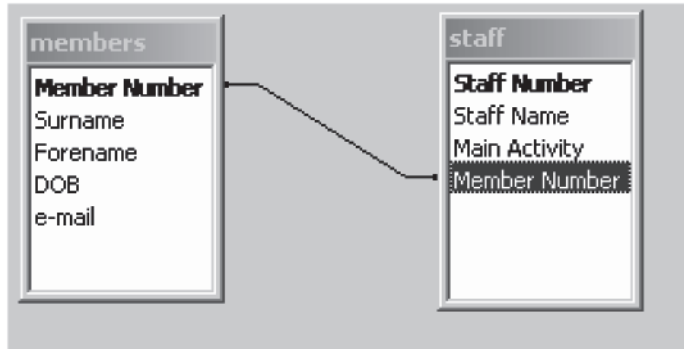
- A Arithmetic and Language Unit
- B Analogue and Logic Unit
- C Analogue and Language Unit
- D Arithmetic and Logic Unit

Q15

(Total 1 mark)



Use the information in this diagram to answer Questions 16 and 17.



16. The diagram shows a database with two linked tables.
This type of database is

- A relative
- B relational
- C flat file
- D structured

(Total 1 mark)

Q16

17. The Member Number is the primary key in the members table.
The correct term for the Member Number in the staff table is

- A secondary key
- B alien key
- C subsidiary key
- D foreign key

(Total 1 mark)

Q17

18. The address of a web page is its URL.
URL stands for

- A Uniform Resource Locator
- B Unidentified Resource Locator
- C Uniform Reliability Locator
- D Unique Resource Locator

(Total 1 mark)

Q18



19. Here are three statements about check digits.

- 1 A check digit is produced by performing calculations on the original number.
- 2 The check digit is always added to the end of the original number.
- 3 Check digits can be used in validation.

The correct statements are

- A 1 and 3 only
- B 1, 2 and 3
- C 1 and 2 only
- D 2 and 3 only

(Total 1 mark)

Q19

20. The main factors governing the power of a computer are

- A the type of processor, the clock rate and the amount of RAM
- B the type of processor, the clock rate and the screen resolution
- C the clock rate, the amount of RAM and the type of operating system
- D the clock rate, the amount of RAM and the screen resolution

(Total 1 mark)

Q20

TOTAL FOR SECTION A: 20 MARKS



SECTION B

1. The details of stocks of standard furniture are held in the **STAND-FURN** spreadsheet.

Part of the **STAND-FURN** spreadsheet is shown.

	A	B	C	D	E	F	G	H	I
1	STOCK NUMBER	STOCK NAME	OPENING STOCK	CLOSING STOCK	COST PRICE	PROFIT (10%)	SELLING PRICE	RE-ORDER LEVEL	RE-ORDER
2	YBC600	York 600cm Bookcase	57	22	£345.00	£34.50	£379.50	35	Y
3	YBC500	York 500cm Bookcase	49	32	£124.00	£12.40	£136.40	35	Y
4	CWR600	Chester 600cm Wine Rack	65	50	£229.00	£22.90	£251.90	35	N
5	CCB600	Chester 600cm Cabinet	68	35	£425.00	£42.50	£467.50	35	N
6	YWR500	York 500cm Wine Rack	143	57	£189.00	£18.90	£207.90	35	N
7	CCB500	Chester 500cm Cabinet	27	22	£367.00	£36.70	£403.70	35	Y

(a) The **SELLING PRICE** is calculated by adding the **PROFIT** to the **COST PRICE**.
The **PROFIT** is 10% of the **COST PRICE**.

(i) Write down the formula used in cell F3 to calculate the **PROFIT** for a York 500cm Bookcase.

.....
(1)

(ii) Write down the formula used in cell G3 to calculate the **SELLING PRICE** for a York 500cm Bookcase

.....
(1)

(b) Stock will need to be re-ordered when **CLOSING STOCK** is less than the **RE-ORDER LEVEL**.

Formulae have been entered in the **RE-ORDER** column to show whether an item needs re-ordering.

Write down the formula used in cell I2.

.....
.....
(3)



(c) The company would like to create a bar chart showing CLOSING STOCK for each item of standard furniture.

Write down the instructions to create this bar chart.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(6)

(Quality of Written Communication: 3 marks)

(Total 14 marks)

QB1

--	--



2. 'Pineforyou' manufactures furniture designed to suit the individual requirements of customers.

(a) (i) Identify the type of specialised software that 'Pineforyou' would use to create these designs.

.....
(1)

(ii) Give **three** features of the software that would help in the design of the furniture.

1

.....

2

.....

3

.....
(3)

(b) Identify **three** pieces of hardware that the company could purchase to make sure that full advantage is taken of this specialised software.

1

2

3

(3)

(Total 7 marks)

QB2



3. Customer details are held in the **CUSTOMER-FILE** database.

Part of this file is shown.

REF. NO.	SURNAME	TITLE	INITIAL	POST CODE	LAST PURCHASE DATE
06086	Jones	Mr	S	SR4 9JK	01/02/07
98103	Sangha	Mr	G	NE24 6HY	05/06/05
97065	Durrán	Mrs	E A	NS54 81H	06/12/08
02105	Courr	Mr	B	DH2 7HG	16/10/08
05076	Jackson	Miss	G	SR6 9PF	06/12/06
97067	Barkley	Miss	D G	ST56 9JH	21/09/07
99043	Vandber	Mrs	K H	DS21 8TS	19/01/09
98120	McKay	Mr	M	NE30 7HA	30/11/07

(a) Validation rules have been set on the REF. NO. field.

(i) Explain the term *validation*.

.....

(2)

(ii) A presence check makes sure that data is entered in the REF. NO. field.

Name **three** other types of validation check that could be used for the REF. NO. field.

For each, give an example of how it would be applied.

Check 1

Example

.....

Check 2

Example

.....

Check 3

Example

.....

(6)



(b) 'Pineforyou' wants to produce a list showing **only** the customers who have bought furniture in 2008.

Write down the instructions to produce this list.

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

(3)

QB3

(Total 11 marks)

4. 'Pineforyou' has installed a Local Area Network (LAN) with workstations in all areas.

(a) Give **three advantages** of using a LAN rather than stand-alone machines.

1
.....
2
.....
3
.....

(3)

(b) Give **two disadvantages** of using a LAN rather than stand-alone machines.

1
.....
2
.....

(2)

QB4

(Total 5 marks)



5. 'Pineforyou' has decided to update its website. The website should be easy for customers to navigate.

Give **three** features that should be included to make navigation easier. For each feature explain how it makes the website easy to navigate.

Feature

Explanation

.....

.....

Feature

Explanation

.....

.....

Feature

Explanation

.....

.....

QB5

(Total 6 marks)

TOTAL FOR SECTION B: 43 MARKS



SECTION C

1. 'Sporting Books' is a mail order company that sells books.
A website www.sportingbooks.co.uk has been created to allow an on-line ordering service.

(a) (i) Identify **three** advantages to the **customers** of being able to order books on-line rather than using the mail order system.

1

.....

2

.....

3

.....

(3)

(ii) Identify **three** advantages to the **company** of being able to receive orders on-line rather than via the mail order system.

1

.....

2

.....

3

.....

(3)



(b) Some customers are concerned about using credit cards to pay on-line.

Give **two** concerns the customers may have about using credit cards. For each identify **one** action the company can take to reduce customers' concerns.

Concern 1

.....

Action

.....

Concern 2

.....

Action

.....

(4)

(c) Joe Green wants to find the website address of 'Sporting Books'.

Explain how he could use the internet to help him find the website address.

.....

.....

.....

.....

.....

.....

(3)

(Quality of Written Communication: 3 marks)

(d) One of the principles of the Data Protection Act states that "Personal data must be accurate and, where necessary, kept up to date".

Give **two** other principles of the Data Protection Act that 'Sporting Books' should observe.

1

.....

2

.....

(2)

(Total 18 marks)

QC1



2. 'Flower Chain' is a garden centre selling a wide range of indoor and outdoor plants.

Tropical plants are housed in a greenhouse where heat, light and moisture conditions must be carefully controlled.

A computerised system has recently been installed to monitor and control these conditions.

(a) Give **three** reasons why a computerised control system is used rather than a manual system.

1

.....

2

.....

3

.....

(3)

(b) Data is captured using sensors.

Explain what a *sensor* is.

.....

.....

.....

.....

(2)

(c) Name a heat sensor.

.....

(1)



(d) The analogue data captured is converted into a digital format using an Analogue to Digital Converter (ADC).

(i) Explain the meaning of *analogue*.

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

(2)

(ii) Explain why the data needs to be converted into a digital format.

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

(2)

(iii) An ADC is part of the device that enables a sensor to be connected to a computer.

Give the name of this type of device.

.....

(1)

(e) The heaters in the greenhouse are turned on or off **as soon as** the data is received.

Identify the term used to describe this type of processing.

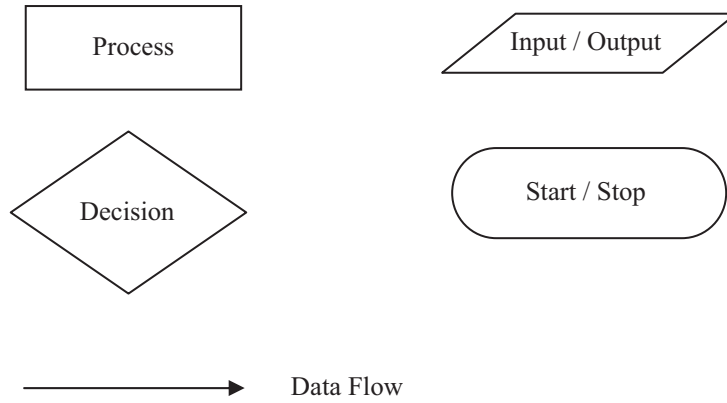
.....

(1)



- (f) The temperature in the greenhouse must be kept between 22°C and 28°C. Sensors provide feedback to the computer which will turn a heater on or off.

Draw a flowchart to illustrate this process. Use these symbols to help you.



Leave
blank

DRAW YOUR FLOWCHART HERE

(6)

QC2

(Total 18 marks)



3. The operating system on a stand-alone computer controls the running of the computer.

(a) Give **three** tasks that the operating system will perform.

- 1
 -
 - 2
 -
 - 3
 -
- (3)**

(b) The operating system includes a user interface.

(i) Graphical User Interfaces (GUI) use icons to identify commands or actions.

Identify **two** other features of a GUI and explain how they help users.

- Feature 1
 - Explanation
 -
 - Feature 2
 - Explanation
 -
- (4)**

(ii) Identify **two** other types of user interface. For each give a disadvantage.

- Type 1
 - Disadvantage
 -
 - Type 2
 - Disadvantage
 -
- (4)**

(Total 11 marks)

QC3

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4. 'Mobiletech' sells mobile phones. It has decided that its stock control system needs upgrading.

Jane is a systems analyst and she has been asked to develop the new system. She starts by investigating the existing system.

(a) Give **three** methods Jane can use in her investigation to find out how the existing system works.

1

.....

2

.....

3

.....

(3)

(b) Jane has identified a number of tasks that she will need to carry out.

Here are some of the tasks.

1. Defining requirements in terms of hardware and software
2. Producing user documentation
3. Preparing a set of test data
4. Deciding on file structure
5. Identifying the flow of data through the system
6. Creating input screens

Complete the table by identifying at which stage of development each task belongs.

Enter the task numbers against the correct stage of development in the table.

Stage of development	Task Numbers
Analysis	
Design	
Implementation	

(6)

QUESTION 4 CONTINUES ON NEXT PAGE.



(c) All of the mobile phones are sold with a guarantee.

The length of the guarantee ranges from 6 to 36 months.

This information is stored in the GUARANTEE field in the STOCK database.

Jane has created this set of test data for the GUARANTEE field.

12	17	41	24	36	29	13	19	6	37
----	----	----	----	----	----	----	----	---	----

(i) Select one **extreme** value from Jane's test data (1)

(ii) Select one **typical** value from Jane's test data (1)

(iii) Select one **invalid** value from Jane's test data (1)

(d) Identify **two** methods that could be used to implement the stock control system. Give a brief explanation of each method.

Method 1

Explanation

.....

.....

Method 2

Explanation

.....

.....

(4)

QC4

(Total 16 marks)

**TOTAL FOR SECTION C: 63 MARKS
TOTAL FOR PAPER: 126 MARKS**

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