

FOR OFFICIAL USE

--	--	--	--	--	--

C

KU PS TOTAL



\* 0 5 6 0 3 1 0 1 \*

**0560/403**

NATIONAL WEDNESDAY, 13 MAY  
QUALIFICATIONS 1.00 PM – 2.45 PM  
2009

**COMPUTING STUDIES  
STANDARD GRADE  
Credit Level**

**Fill in these boxes and read what is printed below.**

Full name of centre

Town

Forename(s)

Surname

Date of birth

Day      Month      Year

--	--	--	--	--	--	--

Scottish candidate number

--	--	--	--	--	--	--	--	--	--

Number of seat

Read each question carefully.

Attempt **all** questions.

Write your answers in the space provided on the question paper.

Write as neatly as possible.

Use **blue or black ink**.

Answer in sentences wherever possible.

Before leaving the examination room you must give this book to the invigilator. If you do not, you may lose all the marks for this paper.





KU	PS
----	----

1. PetrolPatrol is a fuel company.

In order to communicate with branches in different countries they use a *Wide Area Network*.

- (a) (i) Name **one** type of *transmission media* which could be used in a Wide Area Network.

---

1

- (ii) State the main disadvantage of sending information over a Wide Area Network.

---

1

- (b) A monthly management meeting is held using *video conferencing* facilities.

- (i) State **two** advantages **for the company** holding their meetings this way.

1 \_\_\_\_\_

2 \_\_\_\_\_

2

- (ii) Each video conferencing room contains a *webcam*. State the purpose of the webcam in this situation.

---

---

1

- (c) The minutes of the meeting will be sent via e-mail to all the managers. They are highly confidential.

State what should be done to the file before it is sent electronically.

---

---

1

KU	PS
	1
1	
1	

**1. (continued)**

- (d) One manager asked that details of the meeting were saved using a *standard file format*.

- (i) Explain why he made this request.

---

---

- (ii) One standard file format used for word processed documents is *RTF*.

## What does RTF stand for?

R \_\_\_\_\_ T \_\_\_\_\_ Format

- (iii) Name another standard file format used for word processed documents.

---

[Turn over

KU	PS
	2
1	
2	2
	1
	3

2. (a) Garage Galore have invested a lot of money in an *expert system* to help with diagnosing faults when servicing cars.



- (i) Explain in detail what an expert system is.

---

---

---

---

2

- (ii) State **two** advantages of using an expert system rather than relying on a human expert.

1

---

---

2

---

---

2

- (b) Christabel works in the admin department of Garage Galore. She makes use of information stored about customers to send out individual reminders when their cars are due a service.

- (i) State the process that Christabel will use to allow her to produce personal reminders without doing each one individually.

---

---

---

---

1

- (ii) Describe the steps involved in carrying out this process.

---

---

---

---

3

KU	PS

2. (continued)

- (c) Christabel gave a list of customer details to a car dealer. He wanted to send out promotional leaflets advertising special offers.

State whether Christabel was right to hand over the customers' details and give **one** reason to justify your answer.

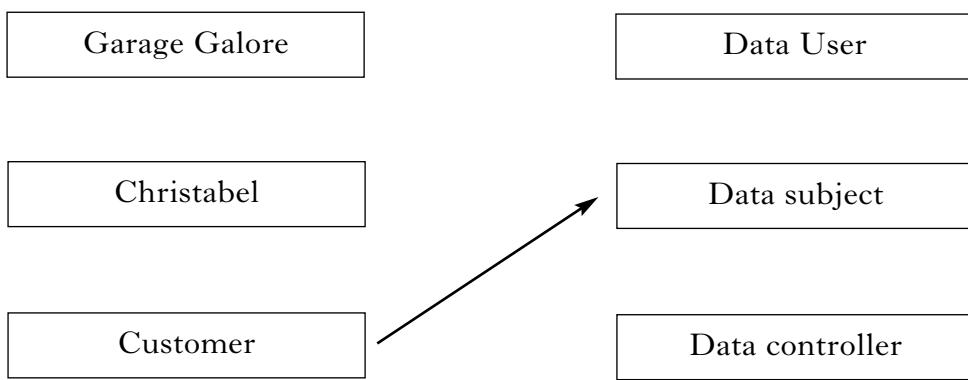
---

---

---

2

- (d) Draw lines to show the correct relationships in the diagram below.



2

[Turn over]

KU	PS

3. Classy Computers have asked their sales team to sell as many printers as possible this week. To encourage the sales team, they have offered a bonus in their wages if they sell 90 or more.

The spreadsheet shown below contains the result of the promotion.

	A	B	C	D	E	F
1		<b>Models of Printer</b>				
2						
3		Z331	Z361	Z391	Total	Bonus
4						
5	<b>Y Pavlova</b>	34	21	17	72	No
6	<b>K Rice</b>	25	45	20	90	Yes
7	<b>J Hirtzel</b>	30	39	22	91	Yes
8	<b>H Scott</b>	26	36	20	82	No
9	<b>A Stewart</b>	35	42	25	102	Yes
10						
11						
12	<b>No. of printers sold to qualify for bonus</b>				<b>90</b>	

- (a) Complete the formula that would be used in cell F5.

$$= \text{IF} (\text{_____} \$E\$12 \text{ , _____ , _____})$$

3

- (b) The formula in cell F5 was replicated down into cells F6 to F9. Both *absolute* and *relative referencing* were used.

Explain carefully why this was necessary

---



---



---



---



---

2

- (c) The sales team were often asked by customers to recommend a printer that they should buy.

Apart from cost, state **two** factors that the customers should consider when buying a new printer.

1 \_\_\_\_\_

2 \_\_\_\_\_

2

KU	PS
1	
2	
4	
1	

4. Charlie would like to help his daughter with her Computing homework. He decides to attend college in the evenings to learn about writing programs.

At the first class the tutor explains that there are a wide variety of *high level languages*.

- (a) High level languages need to be translated before they can be executed.  
State what they are translated into.

---

1

- (b) State **two** other features of a high level language.

1 \_\_\_\_\_

2

2 \_\_\_\_\_

- (c) *Interpreters* and *compilers* are two examples of translator programs.

Read the following statements and write either **interpreter** or **compiler** in the box at the right hand side to match the description.

A translator that points out your mistakes as you enter your program.

A translator that lets you run your program as fast as possible.

A translator that lets you edit your mistakes easily.

A translator that doesn't need to remain in memory when you run your program.

- (d) Translator programs are an example of *systems software*.

State **one** other example of systems software.

---

4

1

[Turn over

KU	PS
	2
	2
	1
	1
	1
	1

5. The Senior pupils at TreeView Academy are planning to stage six coffee mornings throughout the year. They decide to create a poster giving the details.

- (a) One pupil suggests they use a *freeware* program to design the coffee cup.

State what is meant by the term freeware.

---

---

---

2

- (b) Another pupil suggests they start by creating a *template*.

- (i) State what is meant by a template.

---

---

2

- (ii) State **one** advantage of using a template.

---

---

1

- (c) They decide to use a photograph of the school from an old magazine.

State how they can include the photograph in the poster.

---

1

- (d) Once the photograph has been inserted they realise it is necessary to *crop* and *scale* it.

- (i) State what it means to crop the photograph.

---

---

1

- (ii) State what it means to scale the photograph.

---

---

1

KU	PS

5. (continued)

- (e) One of the photographs used was 37 kilobytes.

How many bits are in 37 kilobytes?

Show all your working.

---

---

---

---

2

[Turn over

--	--

KU	PS

6. Nu4Old is a large insurance company that deals with both house and car insurance. It is necessary for them to store details about their clients.

Some of the details for each client are shown below.

Customer Number	Name	Street
2356497289	Alison MacRae	26 Upper Green Street
Town	Postcode	Telephone
Hillytown	HT4 6HM	01536328776
Insurance Type		
House		

- (a) Explain why each customer is allocated a customer number.

---



---

1

- (b) All telephone numbers have 11 digits. State the type of check carried out to ensure this number is entered correctly.

---

1

- (c) Nu4Old have over ten million customers. There is a huge amount of information to be processed and stored very quickly.

State the type of computer most likely to be used.

---

1

- (d) Nu4Old require a random/direct access backing storage medium to store the details about all the customers.

- (i) Name a suitable backing storage medium.

---



---

1

- (ii) Explain why random/direct access would be required.

---



---

1

KU	PS
	1
	1
1	

## **6. (continued)**

- (e) This database of customer details can be accessed by many people at the same time.

State what type of database this is.

---

www.nature.com/scientificreports/

- (f) Kyrre is an employee of Nu4Old. He changed the details of his friend's car to get him a cheaper deal for his car insurance.

- (i) Name the Act Kyrre has breached.

(ii) State **one** other breach of the Act.

[Turn over

7. Fabien has been storing information about his travels using a database package.

The format of a record in his database is shown on the right.

Field Name	Sample Data
Country	Belgium
Capital	Brussels
Area (km <sup>2</sup> )	30528
Population (millions)	10.5
Last Visited	12/05/07
Population Density	334

- (a) Name **two** different data types stored in this record.

1 \_\_\_\_\_

2 \_\_\_\_\_

2

- (b) Fabien decides to add another field to his database. The new field will contain a picture of each country's flag.

State the data type of this new field.

\_\_\_\_\_

1

- (c) Fabien wants to find out how many countries he has visited in the year 2000 which have a population of more than 5 million. He realises that he will need to carry out a *complex search* to produce this list.

- (i) Explain what is meant by a complex search.

\_\_\_\_\_

\_\_\_\_\_

1

- (ii) Describe the steps he should take to produce this list.

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

3

- (d) Fabien has used a *computed field* to calculate the population density.

Explain what is meant by a computed field.

\_\_\_\_\_

\_\_\_\_\_

1

KU	PS

8. Factories often use *mobile robots* to carry heavy components from one place to another.

- (a) (i) Describe **two** different methods of guiding these mobile robots along their routes.

Method 1 \_\_\_\_\_

---

---

---

---

Method 2 \_\_\_\_\_

---

---

---

---

4

- (ii) Give **one** advantage for each of the methods you have described.

Advantage of Method 1 \_\_\_\_\_

---

---

---

---

Advantage of Method 2 \_\_\_\_\_

---

---

---

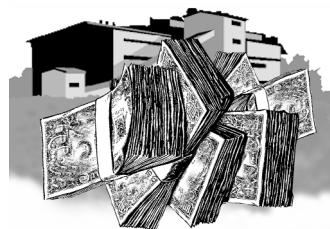
---

2

[Turn over

8. (continued)

- (b) The factory manager realises that new automated equipment is expensive.



- (i) State **two** arguments that the factory manager could use to persuade the company to invest in new automated systems.

1 \_\_\_\_\_  
\_\_\_\_\_

2 \_\_\_\_\_  
\_\_\_\_\_

2

- (ii) He decides to buy *intelligent robots*.

Name **two** hardware features of an intelligent robot.

1 \_\_\_\_\_  
\_\_\_\_\_

2 \_\_\_\_\_  
\_\_\_\_\_

2

[END OF QUESTION PAPER]

**[BLANK PAGE]**

**[BLANK PAGE]**