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**APPLIED INFORMATION AND COMMUNICATION TECHNOLOGY**

**9713/12**

Paper 1

**October/November 2015**

**1 hour 15 minutes**

Candidates answer on the Question Paper.

No additional materials are required.

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name on all the work you hand in.

Write in dark blue or black pen.

Do not use staples, paper clips, glue or correction fluid.

You may use a pencil for any diagrams, graphs or rough working.

**DO NOT WRITE IN ANY BARCODES.**

Answer **all** questions.

The number of marks is given in brackets [ ] at the end of each question or part question.

The businesses described in this paper are entirely fictitious.

This document consists of **16** printed pages.

**Scenario 1****Questions 1, 2, 3 and 4**

The Queen Elizabeth Hospital uses computers to help run its intensive care unit. Nurses are still required to take some readings relating to the condition of the patients. The computer will alert a nurse if readings reach dangerous levels.

The hospital also uses computers to store and retrieve confidential records of all patients. This database needs to be accessed at any time of day. When data is analysed for the purpose of producing statistics it is usually in summarised form to protect patient confidentiality.

- 1 Tick the **four** advantages of using computers in intensive care.

	Advantage ✓
Computers can monitor patients continuously.	
Nurses never get tired and never forget to take readings.	
Readings taken by nurses are more accurate than computers.	
Computers can measure more than one variable at any one time.	
When nurses take readings charts are produced automatically.	
Nurses are faster than computers to react to changes in a patient's condition.	
A computer can monitor the condition of several patients at the same time leaving nurses free to do other tasks.	
Computers do not cost any money.	
A computer can only monitor one condition at a time.	
The use of computers to take readings reduces the chances of nurses being exposed to contagious diseases.	

[4]

- 2 Tick the **four** statements referring to the use of computers in intensive care which are true.

	Advantage ✓
Sensors store the pre-set value.	
Sensors feed back data to the computer.	
If the patient's blood pressure is too high the sensor sends the reading to the computer.	
The sensor readings are converted from digital to analogue so the computer can process them.	
The computer compares any data fed back by a sensor to a pre-set value.	
The computer is unable to produce charts showing the patient's progress.	
Sensors are used to monitor a patient's physical variables such as blood pressure, pulse rate and body temperature.	
The computer cannot take readings without the nurse supervising it.	
If any data is outside the pre-set range the computer sounds an alarm.	
The process is not continuous.	

[4]

3 Explain why batch processing would not be used to warn the nurses about a patient's condition worsening.

.....  
.....  
.....  
.....  
.....  
.....  
.....  
..... [3]

4 Name and describe **two** methods by which patient information could be summarised to help keep patient data confidential.

1 .....

.....  
.....

2 .....

.....  
..... [4]

**Scenario 2**  
**Questions 5 and 6**

Paula Richards is employed by a company to visit and inspect its stores. She spends most of her time travelling.

Paula produces her reports using her laptop computer. She also has a smartphone which she uses for other aspects of her work.

Some of the stores she visits are quite large and the management teams have equipment which allows them to video conference with Paula when she returns to head office to discuss her report.

5 Using aspects of the scenario, describe **four** different uses she could make of her smartphone to help her in her work.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- ..... [4]

6 Describe **five** steps involved in setting up a video conference.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- .....
- 5 .....
- ..... [5]

**Scenario 3****Questions 7, 8, 9, 10 and 11**

First Call Fashions is a very large mail order catalogue company which sells a variety of clothes in the UK. Stella, the owner, has decided to computerise the company operations. She has employed Rafael, a systems analyst, to supervise the process.

Rafael will analyse the current system. He will need to establish the inputs and outputs of the system.

As part of the design stage he will need to design a screen input form to input the details of all the clothes.

He will need to produce user documentation for the system. User documentation often gives guidance on how to use the system such as:

- How to load software/run software/install software
- How to save a file
- How to search
- How to sort
- How to print
- How to add records
- How to delete/edit records

When the system is fully developed he will need to evaluate it.

Stella is going to open a call centre so that customers can phone in for help with their orders. She is considering whether to open it in the UK or overseas.

7 Rafael wants to establish the inputs and outputs of the current system. Describe **three** items he will identify as a result of examining documents.

- 1 .....
- 2 .....
- 3 ..... [3]



8 (a) Apart from navigation aids, describe **five** features of a well-designed screen-based data input form.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- .....
- 5 .....
- ..... [5]

(b) Describe **four** advantages of using a screen form rather than a paper-based form to collect the data.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- ..... [4]

9 (a) Apart from those uses listed in the scenario, describe **four** other items which would be contained in the user documentation, including the reason for their inclusion.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- .....
- 4 .....
- ..... [4]

(b) Describe **three** drawbacks of Rafael **not** providing technical documentation.

- 1 .....
- .....
- 2 .....
- .....
- 3 .....
- ..... [3]

10 Describe in detail, **three** methods of obtaining feedback from users of the new system and for each one give a different drawback of the method.

Method 1 .....

.....

Drawback 1 .....

.....

Method 2 .....

.....

Drawback 2 .....

.....

Method 3 .....

.....

Drawback 3 .....

..... [6]

11 (a) Give **three** advantages of using overseas call centres from the company's point of view.

1 .....

.....

2 .....

.....

3 .....

..... [3]

(b) Give **three** advantages of using UK call centres from the point of view of the customer.

1 .....

.....

2 .....

.....

3 .....

..... [3]

**Scenario 4**  
**Question 12**

Joan is a manager of a department in an examination board. She wants to introduce a multimedia ICT qualification. Eventually, she will send multimedia files by emails to the schools taking the qualification.

She also uses the internet to search for resource materials for the qualification but sometimes cannot obtain the required information.

12 (a) Describe what Joan has to do to prepare an email in order to send a very large attachment.

.....  
.....  
.....  
.....  
.....  
..... [3]

(b) A school receives the email but cannot open the attachment.  
Give **four** reasons why this may happen.

1 .....  
.....  
2 .....  
.....  
3 .....  
.....  
4 .....  
..... [4]

(c) Describe, including the use of Boolean operands, **five** different ways Joan could better target her searches when using the internet.

1 .....  
.....  
2 .....  
.....  
3 .....  
.....  
4 .....  
.....  
5 .....  
..... [5]

**Scenario 5**  
**Question 13**

Hightown Bank, New York, operates an online banking system. A number of customers are concerned about the security of their accounts.

13 (a) Identify the security risks which are described below:

Legitimate-looking emails sent out to customers pretending to be from a bank; when the link in the email is clicked, the customer is sent to a fake website. ....

Malicious code put into a user's computer or server. When the user selects the website they are sent to a fake website instead without their knowledge. ....

Software on a user's computer that monitors all key presses. ....

Illegal access to a computer where data can be deleted, changed or used for malicious purposes. ....

Software that can replicate itself. Once installed on the computer, it can cause it to operate slowly or delete or corrupt files. ....

Small file installed on a user's computer after visiting a website. This allows user preferences to be remembered each time they visit the website. .... [6]

(b) This message is sent from a computer "ICT affects all aspects of our lives". It is converted so that when it arrives at another computer it is seen as "RXG zuuvxgh zoo zhkvxgh lu lfi orevh".

(i) State the name given to this process of conversion. .... [1]

(ii) Describe how it is used as a form of security. .... [2]

(c) Describe, in detail, **four** other safeguards that the bank could use to protect customer account information.

1 .....

.....

.....

2 .....

.....

.....

3 .....

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.....

4 .....

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..... [4]

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