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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/11

Paper 1 Theory

October/November 2021

2 hours

You must answer on the question paper.

No additional materials are needed.

INSTRUCTIONS

- Answer **all** questions.
- Use a black or dark blue pen.
- Write your name, centre number and candidate number in the boxes at the top of the page.
- Write your answer to each question in the space provided.
- Do **not** use an erasable pen or correction fluid.
- Do **not** write on any bar codes.
- You may use an HB pencil for any diagrams, graphs or rough working.

INFORMATION

- The total mark for this paper is 100.
- The number of marks for each question or part question is shown in brackets [].
- No marks will be awarded for using brand names of software packages or hardware.

This document has **16** pages. Any blank pages are indicated.

1 A computer consists of both hardware and software.

(a) Define the term hardware.

.....
..... [1]

(b) Give **two** examples of internal hardware devices.

1
2 [2]

(c) Define the term software.

.....
..... [1]

(d) There are two types of software: system and applications.

Give **two** examples of applications software.

1
.....
2
..... [2]

2 Circle **two** jobs where there has been a decrease in employment as a direct result of the introduction of computers.

| | | | |
|-----------------|------------------------|------------------------------------|-------------------|
| Bus drivers | Car production workers | Delivery drivers for retail stores | Fishermen |
| Payroll workers | Programmers | Teachers | Website designers |

[2]

3 Describe **two** advantages of using a tablet computer rather than a laptop computer.

1

.....

2

.....

[2]

4 Tick (✓) whether the following advantages of analysing a system refer to **looking at existing paperwork**, **observation** or **questionnaires**.

| | Looking at existing paperwork (✓) | Observation (✓) | Questionnaire (✓) |
|--|--|--------------------|----------------------|
| This method gives the systems analyst an overall view of the system | | | |
| Individuals can remain anonymous | | | |
| This method allows information to be collected that cannot be obtained from any other method | | | |
| This method gives the quickest analysis of the data | | | |

[4]

8 An organisation uses the internet and an intranet.

(a) Explain how the purpose of the internet differs from the purpose of an intranet.

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..... [4]

Employees in the organisation are allowed to access the intranet using their smartphones.

The employees are required to secure their smartphones using either facial recognition, passwords or voice recognition.

(b) Tick (✓) whether the following statements refer to **facial recognition**, **password** or **voice recognition**.

| | Facial recognition (✓) | Password (✓) | Voice recognition (✓) |
|--|---------------------------------------|-------------------------|--------------------------------------|
| This method cannot access the smartphone unintentionally | | | |
| The accuracy of this method can be affected by noise | | | |
| This method requires the use of the smartphone's camera | | | |
| This method could be compromised by shoulder surfing | | | |

[4]

9 Robots are used to spray paint cars in a car production company.

(a) Describe **two** other jobs that robots can perform in car production.

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..... [2]

(b) When the spray paint can is empty it needs to be refilled. There is a sensor in the can which measures the amount of paint.

Describe the use of the sensor and microprocessor in this application.

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..... [6]

(b) A spreadsheet contains a list of staff and the rooms they work in at a school.

| | A | B | C | D | E |
|---|------|-------------|-------------------|----|----------------------|
| 1 | Room | Department | Name | | |
| 2 | 29 | Languages | Aaron Garcia | 31 | =VLOOKUP(D2,A2:C7,3) |
| 3 | 30 | History | Julieta Diaz | | |
| 4 | 28 | Chemistry | Ernesto Fernandez | | |
| 5 | 26 | Biology | Salvador Calbo | | |
| 6 | 31 | ICT | David James | | |
| 7 | 49 | Mathematics | Adriene Martinez | | |

(i) Explain, in detail, what the formula in cell E2 does.

.....

.....

.....

.....

.....

..... [3]

(ii) When certain room numbers are typed into cell D2 unexpected results appear in cell E2. Suggest improvements that could be made to ensure the correct result is displayed.

.....

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..... [2]

A teacher in the school has created a spreadsheet to display whether a student has good timekeeping when arriving at lessons. He has produced a formula but thinks it could be improved. The formula is:

=IF(B4>=A\$18,B\$18,IF(B4>=A\$17,B\$17,IF(B4>=A\$16,B\$16,IF(B4>=A\$15,B\$15,IF(B4>=A\$14,B\$14,"")))))

| | A | B | C |
|----|-----------------|-----------|---|
| 1 | | | |
| 2 | Name of Student | | |
| 3 | Half term | Lates | |
| 4 | 1 | 17 | =IF(B4>=A\$18,B\$18,IF(B4>=A\$17,B\$17,IF(B4>=A\$16,B\$16,IF(B4>=A\$15,B\$15,IF(B4>=A\$14,B\$14,""))))) |
| 5 | 2 | 20 | |
| 6 | 3 | 1 | |
| 7 | 4 | 12 | |
| 8 | 5 | 18 | |
| 9 | 6 | 0 | |
| 10 | | | |
| 11 | | | |
| 12 | | | |
| 13 | | | |
| 14 | 0 | Excellent | |
| 15 | 1 | Very Good | |
| 16 | 5 | Good | |
| 17 | 15 | Poor | |
| 18 | 25 | Very Poor | |

(c) Write down the value that should appear in cell C4.

..... [1]

(d) The teacher has improved the formula and has typed in =VLOOKUP(B4,A\$14:B\$18,2)

Explain the advantages of using this formula compared to the original one.

.....

 [4]

12 The use of social networking is a part of modern living.

(a) Define the term social networking.

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..... [2]

(b) Describe the benefits of using social networking.

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..... [6]

(b) The student checks the text he has written using a spell checker.

Explain how a spell checker works.

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..... [2]

(c) Explain why the suggestions made by the spell checker do **not** always give the correct response.

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..... [2]

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