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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/11

Paper 1 Theory

May/June 2022

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 Circle **two** network devices.

- | | | | |
|----------|--------|----------|---------|
| Actuator | Bridge | Database | DVD |
| Hub | Linker | Monitor | Printer |

[2]

2 Complete each sentence using the most appropriate item from the list. Your answers must be different in each case.

- | | | | |
|----------|-----------|----------|-----|
| ADC | an applet | hardware | HDD |
| a router | a sensor | software | SSD |

(a) The physical components of a computer are called

..... [1]

(b) Programs and data are examples of

..... [1]

(c) A small application performing one or two simple functions is called

..... [1]

(d) An input device used in measurement applications is called

..... [1]

3 Identify **two** devices which are used in control systems.

1

2

[2]

- 4 Many laptop computers use the cloud to store data. A technician has produced a report on his laptop computer but has stored the report on a memory stick rather than storing it on the cloud.

Describe **two** advantages of using a memory stick rather than the cloud to store data.

1

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2

.....

[2]

- 5 Many bank cards now use contactless technology.

Describe the advantages and disadvantages of using these cards rather than cards that use chip and PIN.

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[4]

6 Stylesheets are used in web pages.

(a) Explain the term stylesheets when used in web pages.

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[2]

(b) Explain the differences between attached stylesheets and inline style attributes.

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[4]

7 Two types of database are relational and flat file.

(a) Compare and contrast relational databases and flat file databases. Your answer must include similarities and differences.

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[8]

(b) Give, using an example, **one** reason why flat file databases are used in certain applications rather than relational databases.

Reason

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Example

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[2]

8 When using computers people can suffer from Repetitive Strain Injury (RSI).

(a) Describe the term RSI. Include in your answer the causes of RSI.

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

[3]

(b) Identify **three** methods of reducing the effects of RSI.

1

2

3

[3]

9 Martin, who is a teacher, is creating a multimedia presentation to explain a topic to his students.

(a) He produces a master slide.

Write down **four** objects he could include in the master slide.

1

2

3

4

[4]

- (b) Martin wants to record a message for his students. His voice will be added to the presentation. He will also need to listen to his voice to make sure the sound is of good quality.

Name **two** devices that he will need.

1

2

[2]

- (c) Martin will need to use software to create different types of content before including them in the presentation.

Name **two** types of software that he might use and for each one, write down what he would use it for.

Software 1

.....

Use

.....

Software 2

.....

Use

.....

[4]

10 A river authority is concerned about levels of pollution in a major river. The quality of the water in the river needs to be monitored using sensors.

(a) Name **three** sensors that could be used to measure the pollution in the river.

1

2

3

[3]

(b) Discuss the advantages and disadvantages of using computers to measure the pollution in the river rather than humans measuring the pollution.

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[6]

11 A system can be analysed using different methods.

Discuss the advantages and disadvantages of analysing a system by interviewing staff rather than using questionnaires.

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[6]

12 Many company computer network systems use WiFi as a communication system to help prevent the issue of tripping over trailing cables.

(a) For each of the following physical safety issues describe **two** ways of helping to prevent them.

(i) Fire

Prevention 1

.....

Prevention 2

.....

[2]

(ii) Electrocutation

Prevention 1

.....

Prevention 2

.....

[2]

A common use of home computers is online gaming.

(b) Describe **three** eSafety measures which should be taken when playing games on the internet.

1

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2

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3

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[3]

(c) In order to log onto online gaming a user ID and password is needed.

Explain what is meant by a user ID and password and why they are needed.

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[4]

13 (a) Explain the need for copyright legislation when data is published on the internet.

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[4]

(b) Describe methods that software producers use to prevent software copyright being broken.

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[4]

(c) Emails are used by people to communicate with each other. Copyright and using acceptable language in the email are two of the constraints that affect the use of email.

(i) Describe **four** other constraints that may affect the use of email.

- 1
-
- 2
-
- 3
-
- 4
-

[4]

(ii) Describe **two** rules of the use of acceptable language in emails.

- 1
-
- 2
-

[2]

- 14 The manager of a medical centre keeps the doctor’s stock records in a database. The stock for any item is not allowed to fall below 15 items and the manager keeps a maximum of 100 items in stock.

The table shows examples of the stock.

Name_of_item	Serial_number	Number_in_stock	Name_of_supplier	Shelf_number
Medihoney	3081043612211	15	Capimed	0126
Sodium fusidate	1437210227870	60	Brooks Medical	0112
Crepe bandage	2541233164353	100	Capimed	0064
Crepe bandage	2834954736849	89	Cams Meds	0064

As data is entered it needs to be verified and validated.

- (a) Explain why verification is carried out.

.....

.....

.....

..... [2]

- (b) Write down the field name from the table that would be the most appropriate for each of these validation checks. Each answer must be different.

Check digit

Length

Type

[3]

- (c) Name the most appropriate field from the table that could be used as a primary key in the database.

..... [1]

15 A customer is booking a seat on a theatre’s online booking system. The customer reserves seats using the theatre’s website and a debit card. The website displays the seats that are available and a database stores the customer details, the payment details and the seat details.

When the customer enters their debit card details for a seat, the theatre’s computer communicates with the bank’s computer.

(a) Describe **four** checks that the bank’s computer will make on the customer’s bank account.

- 1
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- 2
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- 3
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- 4
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[4]

(b) Describe the processing carried out by the theatre’s computer when making a booking.

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[4]

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