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INFORMATION AND COMMUNICATION TECHNOLOGY

0417/13

Paper 1 Theory

May/June 2024

1 hour 30 minutes

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 80.
- 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 12 pages.



1 Circle **two** solid-state storage devices.

- | | | | |
|----------|-----------|--------------|-----------|
| Actuator | Cloud | CD-ROM drive | DVD drive |
| HDD | Pen drive | Sensor | SSD |

[2]

2 Complete each of the following sentences about web development layers.

(a) The layer used to create the structure of a web page is called

..... [1]

(b) The layer used to display and format elements within a web page is called

..... [1]

(c) The layer that is a scripting language to control elements within a web page is called

..... [1]

3 A student is able to access a secure area of the school's website using zero login.

(a) Explain what is meant by zero login.

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

(b) Biometrics could be used as another method of accessing the secure area.

State **three** examples of biometric methods.

- 1
- 2
- 3

[3]





- 4 Discuss the positive and negative effects of using microprocessor-controlled devices in autonomous vehicles.

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[6]





5 One of the benefits of a Graphical User Interface (GUI) is that it is user friendly.

(a) State **two** other benefits of a GUI.

1

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2

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[2]

(b) State **two** other types of user interface.

1

2

[2]

6 (a) Discuss the advantages and disadvantages of using web-conferencing rather than video-conferencing for meetings.

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[6]





(b) An organisation has decided to use video-conferencing for its meetings.

State the hardware and software required to set up the video-conference.

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[4]





7 A teacher is creating a revision website for her students. The website contains information taken from a number of different sources including published books. These sources are protected by copyright.

(a) State what the teacher needs to do to ensure that she does not break copyright rules when she publishes the website.

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[2]

(b) Explain the principles of software copyright.

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[3]

(c) Explain why copyright legislation is needed.

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[3]





8 Artificial Intelligence (AI) is having an impact on everyday life. Social media now uses AI for many tasks.

(a) State what is meant by Artificial Intelligence (AI).

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[2]

(b) Evaluate the impact of Artificial Intelligence (AI) in the use of social media.

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[4]

9 An expert system can be used in medical diagnosis. An explanation system is a component of an expert system.

(a) State **three** other components of an expert system.

1

2

3

[3]





(b) Explain what is meant by an explanation system.

.....

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.....

.....

[2]

- 10 An automatic vacuum cleaner uses sensors to detect obstacles. If the vacuum cleaner is too close to the obstacle, it stops and automatically changes direction.

Describe the drawbacks of using this type of control system.

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[4]

- 11 Parallel running can be used as a strategy to implemented new systems.

(a) Describe what is meant by parallel running.

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[2]





(b) Describe the benefits and drawbacks of using parallel running.

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[5]

12 One of the risks when entering a password into a computer system is key logging.

(a) Explain what is meant by key logging.

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.....

[2]

(b) Give **two** security improvements that could be made to prevent key logging.

1

2

[2]





- 13 A shopkeeper sells fruit and has created a table containing the name of the fruit, its bar code number and an image of the bar code.

Part of the table is shown.

Type of fruit	Bar code number	Bar code
Apple – Fuji	977135120128	 9 77135 12012 8
Apple – Jona Gold	050023495154	 0 50023 49515 4
Apricot	050128440066	 0 50128 44006 6

Fig. 13.1

- (a) State and describe **two** validation checks that could be used for the bar code number.

1

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2

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[4]





- (b) Describe the advantages and disadvantages of entering the data by scanning the bar code rather than typing in the number.

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[4]

- (c) A bar code reader is an example of a direct data entry device.

State **three** other examples of direct data entry devices.

1

2

3

[3]

14 The features of emails include carbon copy (cc) and blind carbon copy (bcc).

- (a) State **three** other features of emails.

1

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2

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3

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[3]





(b) Describe what is meant by blind carbon copy (bcc).

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[2]

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