



Cambridge IGCSE™

CANDIDATE
NAME



CENTRE
NUMBER

| | | | | |
|--|--|--|--|--|
| | | | | |
|--|--|--|--|--|

CANDIDATE
NUMBER

| | | | |
|--|--|--|--|
| | | | |
|--|--|--|--|

INFORMATION AND COMMUNICATION TECHNOLOGY

0417/12

Paper 1 Theory

May/June 2025

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. Any blank pages are indicated.



1 Circle **two** direct data entry devices.

3D printer

DVD reader

keyboard

mouse

pen drive

QR scanner

RFID reader

SD card

[2]

2 A computer system uses both applications software and system software.

(a) Describe the following types of applications software.

(i) Computer aided design (CAD)

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

[2]

(ii) Measurement software

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

[2]

(iii) Video editing software

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

[2]

(b) State the purpose of applications software.

.....
.....

[1]





- 3 The headteacher at Tawara School is planning to improve the registration system for pupils. The headteacher can choose a system that uses either ID cards with a magnetic stripe or scanners that read handprints.

Discuss the benefits and drawbacks of using a system that will read handprints.

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

[6]

- 4 A computer system needs to be tested before it can be implemented.

(a) State why the following elements need to be tested.

(i) File structure

.....

[1]

(ii) Validation routines

.....

[1]

(iii) The output format

.....

[1]





- (b) Computer software can be tested using normal data, extreme data or abnormal data.

Explain what is meant by abnormal test data.

.....

[1]

- (c) Following the development and testing of the new system, technical documentation is produced.

Explain why technical documentation is needed.

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

[2]

- (d) The file structure, validation routines and output formats are all components of technical documentation.

State **three** other components found in technical documentation.

- 1.....
2.....
3.....

[3]





- 5 The use of computer equipment can lead to many different safety issues.

For each of the following safety issues, describe **three** different ways of minimising the risk.

(a) Electrocution

1.....

2.....

3.....

[3]

(b) Trailing leads

1.....

2.....

3.....

[3]



- 6 (a) Compare and contrast phishing and pharming.

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

[6]

- (b) (i) State **two** precautions that the user should take to protect their data from phishing attacks.

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

[2]

- (ii) State **two** precautions that the user should take to protect their data from pharming attacks.

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

[2]





7 A group of people use satellite navigation systems on their smartphones when walking in remote areas of the countryside.

Discuss the benefits and drawbacks of using satellite navigation systems in this scenario.

[6]





- 8 A bookshop is setting up a database of the books that it sells. Part of the database is shown.

| Name_of_book | Type_of_book | Price | Date_of_publication |
|--------------------|--------------|-------|---------------------|
| Baines Brief Lives | N | 12.99 | 23/03/2023 |
| Spice | F | 24.99 | 06/03/2022 |

- (a) For each of the validation checks, state the most appropriate field. Your answers must be different in each case.

(i) Format check

..... [1]

(ii) Range check

..... [1]

(iii) Length check

..... [1]

- (b) Validation and verification checks are carried out on the data.

Explain why both validation and verification are needed.

.....

 [4]

- (c) State **one** method of verification.

.....
 [1]





- 9 A company's computer network uses a switch.

- (a) Explain the purpose of a network switch.

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

[3]

- (b) A smart TV can connect to a network using wi-fi.

Describe how the smart TV can be connected to the wi-fi.

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

[4]

- (c) State the type of network that the smart TV would connect to.

.....

[1]





- 10** A bank's website uses secure socket layer (SSL).

(a) Explain what is meant by SSL.

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

[3]

(b) State how a user would know that SSL was being used on the website.

.....

[1]

(c) A search engine could be used to find the bank's website.

Describe the benefits and drawbacks of using a search engine to find the website.

[5]





- DO NOT WRITE IN THIS MARGIN
- 11 A student is working on a project and needs to transfer some of her files from the college computer to her home computer. One way in which the student could transfer the files is uploading them onto the cloud.

- (a) State **three** other ways in which the student can transfer the files.

1.....

.....

2.....

.....

3.....

.....

[3]

- (b) Describe how the student could use the cloud to transfer the project.

.....

.....

.....

.....

.....

[3]

- DO NOT WRITE IN THIS MARGIN
- 12 State the processing involved in withdrawing cash from an Automatic Teller Machine (ATM) after a customer has inserted his card into the machine.

.....

.....

.....

.....

.....

[3]





BLANK PAGE

DO NOT WRITE IN THIS MARGIN

Permission to reproduce items where third-party owned material protected by copyright is included has been sought and cleared where possible. Every reasonable effort has been made by the publisher (UCLES) to trace copyright holders, but if any items requiring clearance have unwittingly been included, the publisher will be pleased to make amends at the earliest possible opportunity.

To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced online in the Cambridge Assessment International Education Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download at www.cambridgeinternational.org after the live examination series.

Cambridge Assessment International Education is part of Cambridge Assessment. Cambridge Assessment is the brand name of the University of Cambridge Local Examinations Syndicate (UCLES), which is a department of the University of Cambridge.

