



Cambridge International AS & A Level

CANDIDATE
NAME

--	--	--	--	--

CENTRE
NUMBER

--	--	--	--	--

CANDIDATE
NUMBER

--	--	--	--



INFORMATION TECHNOLOGY

9626/11

Paper 1 Theory

October/November 2022

1 hour 45 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.
- Calculators must **not** be used in this paper.

INFORMATION

- The total mark for this paper is 70.
- The number of marks for each question or part question is shown in brackets [].

This document has **12** pages. Any blank pages are indicated.

- 1 Computers often have utility software supplied with the operating system.

Explain what is meant by utility software and why it is needed.

[4]

[4]

- 2** Sandeep works for a company which uses software to help protect its computer systems against malware. The company is looking for additional ways to minimise the effects of malware. Sandeep and the other workers have already been advised on good practice when logging on and how to use emails safely.

Describe other methods the company can instruct workers to use so that malware can be prevented from entering its computer systems.

[4]

[4]

- 3 Most companies use transaction files to update master files in their payroll systems. One part of the updating process is to calculate weekly or monthly pay. Another part is to update workers' personal and work details.

Without referring to the calculation of pay, describe the three types of transaction that would take place when workers' details are being updated. You must give an example for each type of transaction.

Transaction type 1:

.....

Example 1:

.....

Transaction type 2:

.....

Example 2:

.....

Transaction type 3:

.....

Example 3:

.....

[6]

- 4 A customer at a supermarket checkout pays for their goods by inserting a card into a chip reader and entering their personal identification number (PIN). Electronic funds transfer takes place.

Describe what happens during the electronic funds transfer.

[6]

- 5 Encryption is a method used by organisations to keep data confidential. Symmetric or asymmetric encryption is used.

Explain what is meant by asymmetric encryption.

[5]

- 6** The digital divide affects many people. There can be a divide between older and younger people. Describe how this digital divide could be reduced.

[5]

- 7 Spreadsheet models can be used to forecast the population growth of humans.

Analyse the effectiveness of using a spreadsheet model for this purpose.

[8]

- 8** Maria has been asked to write a word-processed report for her homework. She needs to choose between using proprietary software and open source software.

Describe the differences between these two types of software.

[6]

- 9** Jose has a greenhouse to grow his plants. He lives in a country which has a warm climate so the greenhouse does not need a heater but has microprocessor controlled windows and a temperature sensor.

- (a) Describe how the sensor represents the temperature so the computer can read the data.

[1]

- (b) Complete this pseudocode algorithm to show the processing which takes place to control the temperature of the greenhouse.

```

WHILE system switched on
    INPUT temperature
        IF temperature > preset
            THEN
                IF window closed
                    THEN

```

[8]

- (c) Discuss the advantages and disadvantages, to Jose, of using microprocessor control in this scenario.

[8]

- 10** Companies who store the personal data of individuals use a number of methods to prevent illegal access to this data.

Apart from preventing illegal access, suggest other methods companies can use to protect the confidentiality of this data.

[5]

- 11 Explain what is meant by an indirect data source. In your explanation include descriptions of **two** different indirect data sources.

[4]

BLANK PAGE

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.