GradeMax

* 0000800000001 * DFD

Cambridge Assessment International Education

Cambridge IGCSE™

CANDIDATE NAME

CENTRE NUMBER | | | | | |

CANDIDATE NUMBER | | | | |

9438505345

INFORMATION AND COMMUNICATION TECHNOLOGY **0417/12**

Paper 1 Theory **October/November 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.

© UCLES 2025

[Turn over

GradeMax

1 Circle **two** web development layers which are used when creating a web page.

Behaviour	CSS	Development	HTML
Operational	Presentation	Programming	System

[2]

2 A computer system uses both an analogue to digital converter (ADC) and a digital to analogue converter (DAC).

(a) **(i)** Apart from converting data, state **one** other reason for using an ADC.

.....

..... [1]

(ii) Apart from converting data, state **one** other reason for using DAC.

.....

..... [1]

(b) State **one** device that could be used to input data into an ADC.

..... [1]

(c) State **one** device that could use the data output from a DAC.

..... [1]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

© UCLES 2025

GradeMax

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

3 A student is planning to buy a new desktop computer. He could buy one with a touch screen or one with a keyboard and mouse.

Discuss the advantages and disadvantages of buying a desktop computer with a touch screen rather than one with a keyboard and mouse.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

4 Compare internal memory and backing storage. Include in your answer both similarities and differences.

.....

.....

.....

.....

.....

.....

.....

..... [4]

© UCLES 2025

5 Tawara Cars manufactures and sells four models of a sports car. It uses a paper-based data capture form to record details about these models. It is planning to set up an online data capture form. The current form is shown.

Registration Number:	

Please tick the Model of car

Model of car:	L-sport	E-sport	G-sport	H-sport
Date of registration:				
Sale price	$			

Please tick the State of car and the Type of car

State of car:	New	Used		
Type of car:	Electric	Petrol	LPG	Hydrogen

(a) State, giving reasons for your choice, the most appropriate field name that could be used with the following design features. Your field names must be different in each case.

(i) Drop down list

Field name.....

Reason.....

.....

[2]

(ii) Radio button

Field name.....

Reason.....

.....

[2]

(iii) Input Mask

Field name.....

Reason.....

.....

[2]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

(b) A robot paints cars during manufacture. The robot can be programmed by a set of instructions typed into the computer system.

Explain **one** other way in which the robot could be programmed to carry out this task.

.....

.....

.....

..... [2]

(c) Discuss the benefits and drawbacks of using a robot to paint the cars.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

6 Students can bring their mobile computers into school to complete their work in lessons.

State **two** examples of mobile computers.

1 .....

2 .....

[2]

GradeMax

7 The owner of a theme park has decided to redesign the tickets for its rides. She is planning to use either a bar code or an RFID tag on the ticket.

(a) Describe the advantages of using an RFID tag rather than a bar code.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [6]

(b) The tickets for the theme park are booked online.

Describe the characteristics of an online booking system.

.....

.....

.....

.....

.....

.....

.....

..... [4]

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

8 Pharming can be a threat to data that is stored on computer systems.

(a) Describe what is meant by the term pharming.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(b) State **two** ways in which a user can attempt to prevent pharming attacks.

1.....

.....

2.....

.....

[2]

9 A student is creating a web page using HTML. The student has coded the body section.

State the purpose of the body section. Include in your answer **two** elements that could be found in the body section.

Purpose.....

.....

Element 1.....

Element 2.....

[3]

GradeMax

10 A network manager stores the backup of a school network on magnetic tape.

(a) Describe the benefits and drawbacks of using magnetic tape to store backups.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(b) The music teacher wants to use Bluetooth headphones on the computers in her music classes.

Explain how the network manager could set up the Bluetooth headphones.

.....

.....

.....

.....

.....

.....

.....

..... [4]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

11 Confidential emails need to be secure in order to protect the privacy and confidentiality of the data.

(a) Describe how this could be achieved using encryption of the email.

.....

.....

.....

.....

.....

.....

.....

..... [4]

(b) State **two** methods of data transfer that use encryption.

1.....

2.....

[2]

12 A family has purchased smart CCTV cameras to protect their home when they are at work. These cameras can be monitored from a smartphone.

(a) Describe the positive and negative effects of using smart CCTV cameras.

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [5]

GradeMax

(b) Identify **two** other devices in the home that could be microprocessor controlled.

1.....

2.....

[2]

13 3D printing is used in medicine to create prosthetics.

(a) State **two** other uses of 3D printing in medicine.

1.....

.....

2.....

..... [2]

(b) State **two** benefits and **two** drawbacks of using 3D printing when creating prosthetics.

Benefit 1.....

.....

Benefit 2.....

.....

Drawback 1.....

.....

Drawback 2.....

.....

[4]

14 A school crossing is controlled by traffic lights. When pupils wish to cross the road, they press the button on the crossing control.

Identify **two** output devices that could be used in the crossing control.

1 .....

2 .....

[2]

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

GradeMax

BLANK PAGE

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN

GradeMax

BLANK PAGE

DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
DO NOT WRITE IN THIS MARGIN
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.

© UCLES 2025