Cambridge Assessment International Education

Cambridge IGCSE™ (9–1)

CANDIDATE NAME	

CENTRE NUMBER		CANDIDATE NUMBER	

INFORMATION AND COMMUNICATION TECHNOLOGY **0983/01**

Paper 1 Theory **For examination from 2020**

SPECIMEN PAPER **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. Blank pages are indicated.

1 Complete the following questions using the most appropriate items from the list below.

DVD RAM   SSD   Laser printer   Buzzer   Web-cam

Hard disk drives   Pen drive   Blu-ray disc   Magnetic tape   Mouse

   (a) Identify **two** output devices from the list.

     1 ....

     2 .... [2]

   (b) Identify **two** optical storage media from the list.

     1 ....

     2 .... [2]

2 An examination is marked out of 100 marks and each mark is recorded as an integer in a database.

Tick whether each of the following is the most appropriate example of **abnormal**, **normal** or **extreme** data.

	abnormal (✓)	normal (✓)	extreme (✓)
0			
45			
100			
110			

[4]

3 In website authoring there are three web development layers. They are the **content layer**, the **presentation layer** and the **behaviour layer**.

(a) Tick the layer which best matches the following statements.

	Content layer (✓)	Presentation layer (✓)	Behaviour layer (✓)
This layer is used to format elements within a web page.			
This layer is used to create the structure of a web page.			
This layer is used to enter scripting language to elements within a web page.			
This layer is defined by cascading style sheets.			

[4]

(b) When a web page has been created it needs to be loaded.

Describe the processes a web browser must go through to load a web page.

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.... [2]

(c) Define the following internet terms.

HTTP ....

....

....

....

ISP ....

....

....

.... [4]

4 (a) Identify **four** components of technical documentation.

1 ....

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2 ....

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3 ....

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4 ....

.... [4]

(b) Identify **two** components of user documentation.

1 ....

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2 ....

.... [2]

5 The managers of a company are concerned about the use of their car park. People are parking their cars there in order to visit a nearby shopping mall. The company has decided to install a system that reads number plates so it can monitor the cars entering the car park. People visiting the company will have registered their car number plate with the receptionist before they visit.

(a) Explain how this system would process the number plate to check that the car entering the car park has been registered with the receptionist.

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.... [4]

(b) When visitors sign in at reception they are now given a badge which contains an RFID chip. The chip is read in order to gain access to sections of the building. The previous system used badges which contained a bar code.

Compare and contrast the use of RFID chips with bar codes in this scenario.

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.... [6]

6 Tawara College is organising a reunion for its teachers who have left or retired. A systems analyst is creating a database for the college to store the details of its past teachers. A three-letter code is used for the department. Part of the design of this database will involve the identification of suitable validation checks.

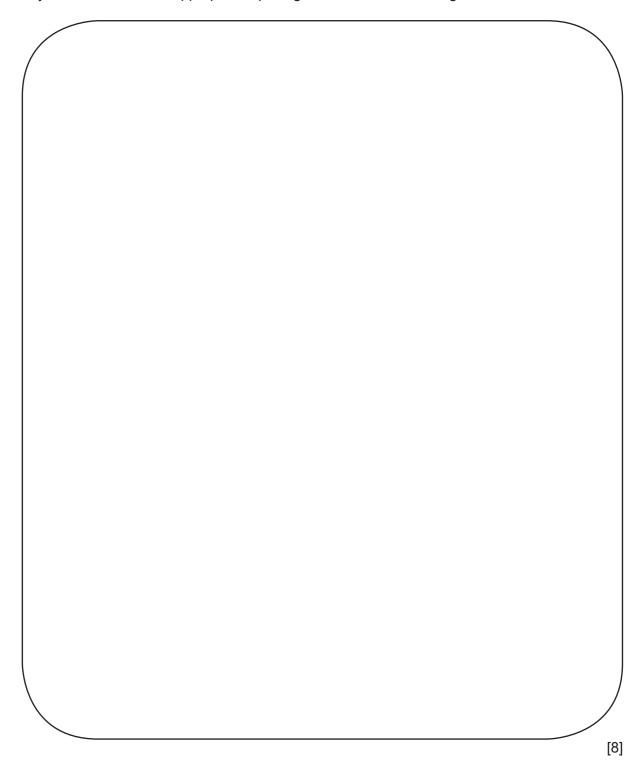Below is a list of some of the data to be included in the database.

Name_of_teacher	Name_at_college	Contact_phone_number	Date_of_birth	Year_left	Department
Peder Vercoe	Peder Vercoe	01223553311	1 Aug 1980	2008	HIS
Katrina Jensen	Katrina Singh	07700901094	26 Jul 1988	2009	MAT
Seth Gamal	Seth Gamal	07700917099	1 Feb 1972	2019	ICT

(a) For the following fields write down the most appropriate validation check. Each validation check must be different.

(i) Department .... [1]

(ii) Date_of_birth .... [1]

(iii) Year_left .... [1]

(b) The systems analyst has set the data type for the contact_phone_number field as text.

Explain why this field has been set for a text data type rather than a numeric data type.

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.... [2]

(c) Design an online data entry form which could be used to enter the details of one teacher, using all the fields shown in the example data.

Your design must represent a computer screen and where appropriate allow the user to enter data by clicking the mouse rather than entering text.

In your answer include appropriate spacing for each field and navigational aids.

[8]

7 A student is using a computer to access social media.

Explain how a firewall would be used to secure the data in the computer connected to the internet.

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.... [4]

8   A company has offices in London and Beijing. The managers of the company meet in person, at a face-to-face meeting twice a year in their conference rooms either in the London office or the Beijing office. The cost of air travel has caused the managers to consider using video-conferencing rather than holding face-to-face meetings.
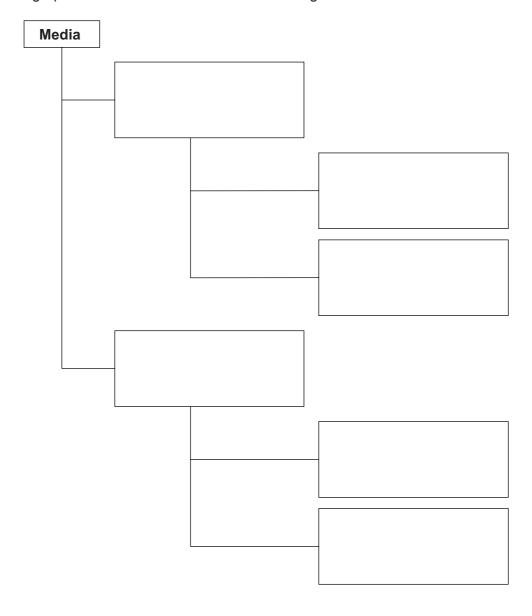
   (a) Discuss the benefits and drawbacks to the company of using video-conferencing. You should ignore the cost of air travel in your argument.

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(b) Apart from a keyboard and a mouse, identify **three** other hardware devices which must be present for a video-conference to take place.

1 ....

2 ....

3 .... [3]

9 Juan has taken a photograph of a castle and has removed part of the image. The image before the change and the image after the change are shown below.

Image 1   Image 2

(a) Identify the formatting technique Juan used to do this.

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.... [1]

(b) Describe the steps Juan used to change the image.

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.... [2]

(c) Juan has set up a hierarchical folder structure for his media directories so that he can easily locate certain files. Juan has stored the photograph in his college work folder.

Complete the boxes to show the most appropriate hierarchical folder structure, to store photographs and videos for both home and college work.

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Media
   ┌─────────────┐
   │             │
   └─────────────┘
          ┌─────────────┐
          │             │
          ├─────────────┤
          │             │
          └─────────────┘
   ┌─────────────┐
   │             │
   └─────────────┘
          ┌─────────────┐
          │             │
          ├─────────────┤
          │             │
          └─────────────┘
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[3]

10 A teacher has created a spreadsheet of students' test marks. She has written a formula in cell C4 in the spreadsheet. Part of the spreadsheet is shown below.

◢	A	B	C	D	E	F	G	H	I	J	K
1				0	9	14	19	27	33	40	47
2				U	G	F	E	D	C	B	A
3	name_student	test mark	grade								
4		43	=HLOOKUP(B4, D1:K2,2)								
5											
6											

(a) Explain what the formula in cell C4 does.

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.... [3]

When the teacher copies the formula down column C an error occurs.

◢	A	B	C	D	E	F	G	H	I	J	K
1				0	9	14	19	27	33	40	47
2				U	G	F	E	D	C	B	A
3	name_student	test mark	grade								
4	Scott Major	43	B								
5	Bai Chuang	85	#N/A								
6	Valeria Garcia	35	#N/A								

(b) Explain why the error has occurred and what the teacher has to do to stop the error from happening.

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.... [3]

11 Smartphones use touch screen technology that requires a Graphical User Interface (GUI).

Describe **four** advantages of users having a GUI on a smartphone rather than a Command Line Interface (CLI).

1 ....

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2 ....

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3 ....

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4 ....

.... [4]

12 The use of computers continues to change the way employees work.

(a) Describe how the use of computers has led to a number of employees changing their working patterns.

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.... [6]

(b) The use of computers has had an effect on the health of employees. For each of the statements below, identify the health problem most likely to be associated with them and **two** possible solutions to the problem. Your answers should be different in each case.

	Health problem	**Possible solution**
Looking at a monitor for a long period of time	....	1 .... 2 ....
Sitting too close to the office laser printer	....	1 .... 2 ....

[6]

13 Describe **two** methods of verification and explain why verification is needed.

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.... [4]

14 Bank cheques are usually read using Magnetic Ink Character Recognition (MICR). Recent developments mean that cheques can now be photographed by a smartphone and processed using Optical Character Recognition (OCR).

Discuss the advantages and disadvantages of using MICR rather than OCR for reading cheques.

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.... [6]

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