Cambridge International AS & A Level

CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

INFORMATION TECHNOLOGY **9626/11**

Paper 1 Theory **May/June 2021**

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 90.
- The number of marks for each question or part question is shown in brackets [ ].

This document has **20** pages. Any blank pages are indicated.

[Turn over

1 (a) Data can exist in two states, dynamic or static.

Tick the most accurate statement referring to dynamic data.

	✓
A sentence in a textbook that says, 'The American Declaration of Independence was in 1776' is an example of dynamic data	
Data that is read from and not written back to a file is called dynamic data	
A hard copy newspaper is an example of a dynamic data source	
Dynamic data can be updated quickly	

[1]

(b) Tick the scenario that involves the use of an indirect data source.

	✓
Handing out a questionnaire to factory workers to find out about working conditions	
Using sensors to monitor pollution in a river	
Asking businesses for their customers' details to produce a mailing list	
Observing the number of customers entering a store to see how busy it is	

[1]

When data is entered into a database, verification is often used.

(c) Analyse, including their effectiveness, the different methods of verification that can be used when entering data into a database.

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2 There are a number of different ways that data can be directly input to a computer.

(a) Tick the most accurate statement referring to the inputting of text using an Optical Character Reader.

	✓
It is a lot slower to enter large amounts of text than an inexperienced user typing it in	
It can be used to read ordinary handwriting	
It is always completely accurate, with no mistakes being made	
It is more expensive to scan the text than to pay someone to type in the text	

[1]

(b) Tick the most accurate statement referring to the inputting of examination paper answers using an Optical Mark Reader.

	✓
It is very suitable for entering text	
It can read marks made on an otherwise blank piece of paper	
It is much more accurate than data being keyed in by a person	
If the marks are not in a dark enough pencil, they are still always read correctly	

[1]

(c) Evaluate, by weighing up the advantages and disadvantages, the use of MICR for inputting text.

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3   Financial reports can be produced using word processing software or spreadsheet software.

    Compare and contrast the use of these two pieces of application software for this purpose.

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4 Describe how the data from an air pollution monitoring system is collected and prepared, ready for processing by a computer.

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5 A school has classrooms where students can use computers to access the school network. There are other classrooms where the computers do not have access to the school network.

Compare and contrast the use of computers in both types of classroom.

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6 The World Wide Web is a service provided by the internet.

Describe, without referring to how it is accessed, what is meant by the World Wide Web.

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7 The manager of an IT department has been asked to set up a video-conference. At the moment she only has a router, a networked computer and a large screen.

Describe how she would set up this video-conference before joining in.

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8 A company sells domestic appliances. The spreadsheet shows the sales of washing machines for the first five months of this year.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	**Month**	**Serial Number**		**Price**										
2	Jan	614481		$481		**Sales Month**	**Monthly Total**							
3	Jan	707617		$617		Jan	$1,964							
4	Jan	227616		$616		Feb	$1,728							
5	Jan	907250		$250		Mar	$392							
6	Feb	485231		$231		Apr	$815							
7	Feb	318299		$299		May	$1,100							
8	Feb	211500		$500										
9	Feb	052066		$66										
10	Feb	376632		$632										
11	Mar	086392		$392										
12	Apr	392059		$59										
13	Apr	757756		$756										
14	May	284074		$74										
15	May	517520		$520										
16	May	336250		$250										
17	May	134256		$256										
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Fig. 8.1

(a) The formula in cell D2 is =VALUE(RIGHT(B2,3)).

Explain, without using cell references, what this formula does.

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(b) In Fig. 8.1, the formula in cell G3 is =SUMIF(A$2:A$17,F3,D$2:D$17).

Explain, without using cell references, what this formula does.

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(c) The bar chart in Fig. 8.1 lacks information about what it represents. It has been created from contiguous data.

   (i) Identify the cell range that was used to create the bar chart.

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   (ii) Describe what information should be added to the bar chart.

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(d) Evaluate, by weighing up the advantages and disadvantages, the use of the spreadsheet in Fig. 8.1 for financial forecasting.

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9 Metropolis City Library stores details of its books and borrowers in a database. Part of the Borrowers table is shown in Fig. 9.1.

BorrowerID ▾	FamilyName ▾	FirstName ▾	Phone ▾	Town_lived_in ▾
1	Gale	Clemantine	01164960567	Mintair
2	Brown	Christine	01134960965	Redleigh
3	Leadbetter	Karla	07700900863	Lowtown
4	Brierley	Fred	01134960675	Redleigh
5	Greenhalgh	Ben	01164960001	Mintair
6	Pooley	Christopher	03069990694	Armley
7	Chalmers	Rio	07700900900	Fromman
8	Lewis	Ruksana	08081570945	Lowtown
9	Patel	Angela	09098790142	Fromman
10	Bopal	Udoka	01614960836	Lowtown
11	Akula	Billy	01914980487	Armley
12	Benson	Wesley	01845632545	Lowtown
13	Breen	Wally	01915647379	Armley

Fig. 9.1

The librarian has created the following query:

Field:	BorrowerID	FamilyName	FirstName	Phone	Town_lived_in
Table:	Borrowers	Borrowers	Borrowers	Borrowers	Borrowers
Sort:					
Show:	☐	☑	☑	☐	☑
Criteria:		Like "B*"			<>"Lowtown"
or:					

Fig. 9.2

(a) (i) Explain what information the librarian is looking for when using the query in Fig. 9.2.

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(ii) Identify the information that the query would output using the data in Fig. 9.1.

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Part of the Books table is shown in Fig. 9.3.

ISBN	Title	Author	Publisher	NumberofCopies	Replacement Cost
9780577185273	Ruinous Orange	Jonathon Roberts	Ellipsoid	3	$16.99
9780593039427	That Was Then	Jaswant Sandhu	Round Moon Publishers	4	$10.00
9780593065907	The Cheap Strangers	Reeta Khan	Round Moon Publishers	1	$18.99
9780752856006	Too Open Too Short	Paul Stevenson	Douglas Books	2	$16.99
9781356892467	The Divide of Decay	Donal Haroldson	Travellor Books	2	$19.99
9781409187276	Light and Day	Gabrial Aston	Betelgeuse	2	$18.99
9781544196873	Never the Poor	Jaswant Sandhu	Round Moon Publishers	3	$18.99
9781772460886	Gloom Brother	Rowena Littleton	Douglas Books	1	$20.99
9781772469285	Tempest Brother	Rowena Littleton	Douglas Books	1	$13.99
9781780835991	Ambuscade	Hortense de Vandre	Possum Books	2	$12.99
9781781254293	Significant Numbers	Jan Tudor	Frowpile Books	4	$17.99
9781846962345	Respeto por la Castilla	Celia Rodriguez	Possum Books	4	$9.99

Fig. 9.3

The librarian has created the following query:

Field:	ISBN	Title	Author	Publisher	NumberofCopies	ReplacementCost
Table:	Books	Books	Books	Books	Books	Books
Sort:						
Show:	☐	☑	☑	☐	☑	☐
Criteria:			Like "*son"			
or:						< 10

Fig. 9.4

(b) (i) Explain what information the librarian is looking for when using the query in Fig. 9.4.

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(ii) Identify the information that the query would output using the data in Fig. 9.3.

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10 A company is creating a database to record information about each employee. The IT manager is creating an on-screen data entry form that will be used by the Human Resources department. This is her first design:

Name____

Address_____

Date of birth_____

Gender_____

Date joined company_____

Salary_____

Describe, in detail, appropriate improvements that could be made to the form to make data entry more accurate and easier to complete.

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11 Explain, using examples, what is meant by the term generic file format.

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12 Describe, in detail, what is meant by a hierarchical database management system.

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