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Cambridge International AS & A Level

Cambridge International Examinations
Cambridge International Advanced Subsidiary and Advanced Level

CANDIDATE NAME	

CENTRE NUMBER						CANDIDATE NUMBER					

8220834592

INFORMATION TECHNOLOGY **9626/12**

Paper 1 Theory **May/June 2018**

1 hour 45 minutes

Candidates answer on the Question Paper.

No Additional Materials are required.

READ THESE INSTRUCTIONS FIRST

Write your Centre number, candidate number and name in the spaces at the top of this page.
Write in dark blue or black pen.
You may use an HB pencil for any diagrams, graphs or rough working.
Do not use staples, paper clips, glue or correction fluid.
DO **NOT** WRITE IN ANY BARCODES.

Answer **all** questions.

Calculators must not be used on this paper.

At the end of the examination, fasten all your work securely together.
The number of marks is given in brackets [ ] at the end of each question or part question.

Any businesses described in this paper are entirely fictitious.

This document consists of **15** printed pages and **1** blank page.

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1 Tick the **four** most accurate statements referring to dynamic and static data.

	✓
Dynamic data is data that does not change.	
Data that is read from and not written back to a file is called static data.	
Data stored on a CD ROM is an example of dynamic data.	
Data on a web page that is updated from time to time is an example of dynamic data.	
It is very difficult to add information to a static information source after it has been created.	
There is a limited amount of information in a dynamic information source compared to a static one.	
Dynamic information sources are never checked for accuracy.	
A static information source can have information updated quickly.	
The data in a static data source is always up to date.	
There can be many contributors to a dynamic data source so the information can be inaccurate.	

[4]

2 Tick the **four** most accurate statements referring to hardware and software.

	✓
Compilers and linkers are examples of system software.	
Device drivers and interpreters are examples of application software.	
Word processing and spreadsheets are examples of hardware.	
Software is another name for computer programs.	
Software is written in machine code before being converted to high-level language.	
Viruses are a type of software.	
Malicious bots are a type of hardware.	
System software directly operates the computer hardware.	
Operating systems are types of hardware.	
A mouse and keyboard are the basic software components of a computer.	

[4]

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3 The secretary of a company is transferring workers' records from paper to a new computer database. She wishes to make sure the data in the database is accurate. To check the data she is using verification and validation.

Using an example, or otherwise, explain why she is using validation as well as verification.

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4 Many personal computers are bought with certain types of software already installed. This includes a number of items of utility software.

Describe how each of the following utilities carries out its function.

(a) Anti-virus software .....

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(b) Backup software .....

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(c) Disk defragmentation software .....

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5 Computer controlled traffic lights are used to control traffic flow in major cities.

Identify **three** input devices which could be used and describe their use in such a system.

Device 1 .....

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Use .....

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Device 2 .....

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Use .....

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Device 3 .....

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Use .....

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6 Many computer users often confuse the terms the 'internet' and the 'World Wide Web'.

Explain what is meant by the term the 'World Wide Web'.

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7 A managing director of a company supervises other directors. Each director has three departments they are responsible for. Each department has several workers. The company stores information about all its workers in a hierarchical database.

Explain what is meant by a hierarchical database management system and describe how such a system would be used to store the workers' data.

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8 Here is a spreadsheet showing the prices of various toys in a shop. The discounted price is found by using a VLOOKUP formula in cells E8:E13.

E8 | =D8-(VLOOKUP(C8,$C$3:$D$5,2,FALSE)*D8)

	A	B	C	D	E	F	G	H
1								
2			Discount code					
3			A	20%				
4			B	15%				
5			C	10%				
6								
7	Toy			Price	Discounted price		Number sold	
8	Elephant		A	$45	$36.00		4	
9	Cheetah		A	$35	$28.00		6	
10	Giraffe		C	$55	$49.50		10	
11	Lion		B	$50	$42.50		5	
12	Leopard		A	$40	$32.00		6	
13	Zebra		B	$30	$25.50		3	
14								
15								
16								

(a) By describing what the formula in cell E8 does, explain the need for absolute and relative cell referencing.

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(b) The owner of the shop wants to see which toys have a *Discounted price* that could be considered cheap and those that could be considered expensive. He would like to see all the cells with toys which are more than \$40 shaded blue, all those that are less than \$30 shaded yellow and the remainder shaded green.

Describe how this could be achieved without each individual cell having to be changed.

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(c) The owner wants a chart showing the *Number sold* of each toy as a proportion of the total number of toys sold.

Identify the most suitable type of chart which would be used to show this information and describe how it would be produced.

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9 A medical centre uses expert systems to help diagnose illnesses.

Explain how the components of an expert system would be used to produce the diagnosis of an illness.

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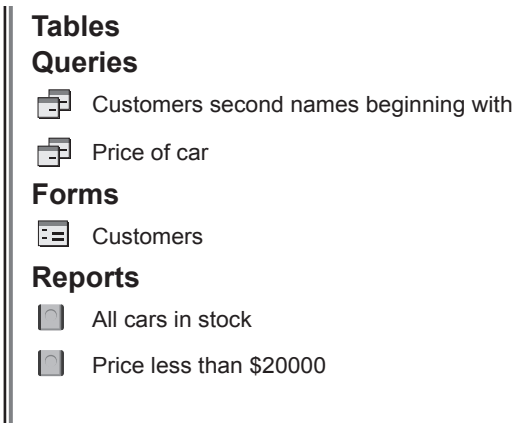
10 A car salesroom has a relational database which stores details of the cars and the customers who have purchased a car. The manager uses it to search for information about the cars and the customers. She also produces reports based on these searches.



(a) She wants to have an easier way of accessing the queries, forms and reports.

Design a switchboard for her which will allow her to go to any of the reports, forms or queries already set up as shown in the image above.

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(b) Referring to any **four** interactive items on your switchboard explain what will happen if they are selected.

Item 1 .....

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Item 2 .....

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Item 3 .....

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Item 4 .....

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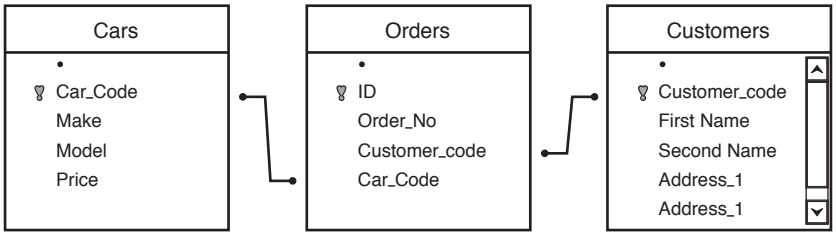
(c) Below is a diagram showing the tables in the database.



The car salesroom manager wanted a list of cars made by Frod as well as, in the same list, any cars ordered by customers whose second name begins with B.
The printout shows the makes and models of cars, first and second customer names who have ordered them and the order number.

Make	Model	First Name	Second Name	Order_No
Frod	Deomon	Alan	Sutton	9
Frod	Deomon	Bruce	Silversmith	8
Frod	Deomon	Johann	Schmidt	5
Frod	Deomon	Brian	Biggins	3
Olap	Azum	George	Babak	10
Yatoya	Yangtse	Kulvir	Bains	7

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Describe, in detail, the steps required to set up a query which would display this list.

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11 Many major supermarkets now use a variety of monitoring technologies to check the work of their employees.

Evaluate the use of technology to monitor employees in the workplace.

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12 Financial models are often created using spreadsheet software rather than using manual methods.

Evaluate the use of spreadsheet models for this purpose.

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