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INFORMATION TECHNOLOGY

9626/11

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.

- 1 Tick the **four** most accurate statements referring to the meaning of data and information.

	✓
Data consists of raw facts and figures.	
Information when processed becomes data.	
Data is a collection of text, numbers, symbols, images or sound.	
Data does not need to have meaning to become information.	
Knowing that 159.5, 164.3, 162.9 and 172.3 are the heights in centimetres of pupils in a school makes it a set of data.	
Data cannot be interpreted until it is organised.	
Data is never represented by binary in a computer.	
Data must have a context to become information.	
Data is the result of processing information, usually by computer.	
A group of facts which are used in context is called a set of data.	

[4]

- 2 Tick the **four** most accurate statements referring to different types of user interface.

	✓
A mouse is essential for entering commands when using a command line interface.	
Computer beginners often prefer to use a command line interface.	
A graphical user interface does not require the user to learn many commands off by heart.	
Users can only draw charts when using a graphical user interface.	
A graphical user interface consists of windows, icons, menus and pointers.	
A microphone is needed to input commands into a dialogue interface.	
A dialogue interface requires the user to be a computer expert.	
A gesture based interface does not require the use of any input devices.	
A gesture based interface usually concentrates on face and hand movements.	
The time taken for a command to be given and the response appearing on the screen is not important in a dialogue based interface.	

[4]

3 An author is using a computer to write a book.

(a) Describe, in detail, how she could use different sets of keys on her keyboard to edit and save the book.

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(b) When the author finishes a chapter she wishes to print it out.

Name **three** appropriate types of printer, and for each one give a different advantage to the author for using it compared to the others.

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- 5 People working away from their office are able to make use of their company's network through a VPN.

Explain what is meant by a VPN.

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6 Many organisations use expert systems as a diagnostic tool.

Describe, in detail, the components of an expert system.

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7 Describe the importance of considering a user’s mental model when a designer seeks to create a user interface for them.

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8 Juan is the owner of a small company. He has created a spreadsheet to calculate the payroll. His spreadsheet is shown below.

Each worker pays one of four different rates of tax.

Each worker has one of four different tax allowances. A tax allowance is the amount that can be earned before workers start paying tax.

	A	B	C	D	E	F	G	H	I	J
1	Range of tax rates						Tax allowance range			
2										
3	A	20%					W	X	Y	Z
4	B	30%					200	220	240	260
5	C	35%								
6	D	40%								
7										
8										
9	Worker's name	Weekly wage	Tax rate	Tax allowance		Taxable pay	Wage after tax deduction			
10										
11	Patrick O'Reilly	250	B	Y		10	\$247			
12	John McDonnell	300	D	Z		40	\$284			
13	Louise Gimenez	280	A	X		60	\$268			
14	Jeanette Grimault	260	A	Y		20	\$256			
15	Xavier Hernandes	250	C	W		50	\$233			
16	Paolo Riva	240	B	W		40	\$228			
17	David Kennedy	280	D	Z		20	\$272			
18	Sian Evans	270	A	Y		30	\$264			
19	Karl Gustaffson	260	B	W		60	\$242			
20										

(a) To make it easier to do the calculations Juan has used named ranges. The *Range of tax rates* is called **Rate** and the *Tax allowance range* is called **Allowance**.

Describe how you would set up the named range **Allowance**.

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- (b) Each worker has an amount, related to their *Tax allowance*, deducted from their weekly wage to calculate the *Taxable pay*.

Write down the formula that should go in cell F11 to calculate the *Taxable pay* for Patrick O'Reilly. The formula should be easy to replicate and use a named range.

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You can use the space below for any working you need.

- (c) The *Taxable pay* is multiplied by the rate of tax to calculate the tax which must be paid, which is then deducted from their *Weekly wage*. The result will be their *Wage after tax deduction*.

Write down the formula that should go in cell G11 to calculate the *Wage after tax deduction*. The formula should be easy to replicate and use a named range. Identify the steps which need to be taken to display the value in G11 exactly as shown in the spreadsheet.

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You can use the space below for any working you need.

- 9 A company has its own website and wishes to add a music soundtrack. Its web designers will need to edit the soundtrack before uploading it. They will need to use sound editing software.

Describe, including their effects, the following aspects of sound editing software.

(a) Sampling rate
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(b) Sampling resolution
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(c) Trimming
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(ii) You run the query and type in the Group size as 4 and the Code as EGY.

Write down the *Durations* that will be printed out.

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(b) The *Duration* field has only the values shown in the database excerpt. The database needs to be set up to allow you to enter the data in this field without using the keyboard to type in the value each time.

Describe how this would be done and explain how you would now enter the data.

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- (c) When the database was initially set up it did not have the *Country* field. Data was exported to a spreadsheet and a formula created, using the *Code* field, to add the names of the countries with the layout exactly as shown in the database excerpt.

Without specifying the formula precisely, explain how this could be achieved.

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