CANDIDATE NAME

CENTRE NUMBER

CANDIDATE NUMBER

INFORMATION TECHNOLOGY **9626/11**

Paper 1 Theory **May/June 2019**

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.

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.

Calculators must not be used on this paper.

Any businesses described in this paper are entirely fictitious.

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

1   The coding of data refers to using M for male and F for female, for example.

Tick the **four** most accurate statements regarding the coding of data.

	✓
Data becomes easier to interpret	
Coding of value judgements is always very accurate	
The coding of data saves storage space	
Codes cannot be used in a relational database	
It speeds up data entry	
All data can be coded	
There are fewer mistakes when entering data	
Codes are not too complicated so there are never any errors on data entry	
Validation is easier to perform on data	
Coded data makes the computer slower when searching for data	

[4]

2   The management of a hotel is introducing a computer system for producing bills for their customers. They are considering which type of printer to use.

Tick the **four** most accurate statements regarding different types of printer, if used in the hotel reception area.

	✓
Laser printers produce very high quality output	
A dot matrix printer would produce higher quality output than an inkjet printer	
An inkjet printer would be slower at producing output than a dot matrix printer	
Dot matrix printers use continuous stationery	
Dot matrix printers need the ink cartridge changing more frequently than inkjet printers	
Dot matrix printers are very quiet which is important in a hotel reception area	
A laser printer can operate in harsh conditions, unlike a dot matrix printer	
A laser printer toner cartridge is more expensive to buy than an inkjet cartridge	
Multi-part stationery is easier to use with laser printers than with dot matrix printers	
Inkjet printers are cheaper to buy than dot matrix printers	

[4]

3 Items of data could be the following:

45612, fred, π, £, ≥ or

Explain, by describing what is meant by information, why these are just items of data.

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4   Most schools have introduced e-safety lessons because teachers are becoming concerned about the way their students use the internet when not in school. One of their concerns is that students may be revealing personal information about themselves.

Describe the problems associated with this and other problems that arise from students using the internet.

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5 Many companies with different branches have Local Area Networks (LANs) which connect to form a Wide Area Network (WAN).

Compare and contrast the characteristics of a LAN and a WAN owned by one company.

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6 Louis has partly typed up the notes from his IT lesson. He wants to complete these at home. Sophia, a fellow student, tells him that it may be difficult as he has been using proprietary software.

Explain what is meant by proprietary and open-source file formats, giving reasons why open-source file formats are needed.

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7 An operating system is system software that manages computer hardware and software resources.

Describe the tasks that an operating system carries out.

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8 There are a number of ways that fraudsters can obtain money from customers' bank accounts.

(a) Describe how the fraudster would use vishing to obtain a customer's personal data.

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(b) Describe how the fraudster would use smishing to obtain a customer's personal data.

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9 Paolo is the owner of a small company with ten workers. He is developing a spreadsheet to calculate the payroll. He has started by importing a text file of the workers' names. The list consisted of each worker's family name followed by a comma then a space then their first name.

He wants to split the names into separate family names and first names by finding the position of the comma in each cell in column A.

He has discovered a new function, LOCATE, which gives the position of the first occurrence of a single character in a word.
For example, =LOCATE("e",I4) gives the result 2.

His first attempt at the spreadsheet is shown below.

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Name		Position of comma		Family name	First name			Job	Weekly pay		Rate per hour	Hours worked
2													
3	Smith, John								Polishing	450		15	30
4	McDonnell, Louise								Secretary	500		10	50
5	Hernandes, Juan								Welding	450		10	45
6	Kennedy, Sean								Orders	500		16	31.25
7	Gustaffsson, Johan								Fitter	500		20	25
8	Davies, Iueuan								Electrician	550		11	50
9	Lopez, Ramon								Manager	500		25	20
10	Garcia, Isabel								Painting	550		20	27.5
11	Costa, Albertina								Invoices	450		15	30
12	Fernandez, Mariela								Sales	550		11	50
13													

(a) Using this LOCATE function, write down the formula he would use in cell C3. The formula must be easy to replicate.

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

(b) He will use a formula in cell E3 to produce Smith. Making use of cell C3, write down the formula, **without** using the MID function, which must be easy to replicate.

There must be no spaces, before, or after the name.

= ....[3]

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

(c) He will use a formula in cell F3 to produce John. Making use of cell C3, write down the formula, **without** using the MID function, which must be easy to replicate.

There must be no spaces before, or after, the name.

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

(d) Describe the steps he would use to format the Weekly pay column so that the only difference that would be made would be to place a $ sign in front of the value.

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(e) Using **only** the sort feature on columns I and J, explain how you would be able to get the following values in the given cells. You need to ensure data integrity is maintained.

    (i) 500 in cell J6 with Secretary in cell I6 and Davies, Iueuan in A12.

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    (ii) 500 in J7 with Orders in I8 and Smith, John in A11.

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10 A car park has a barrier which operates automatically. It opens when a car approaches it and closes when the car is clear of the barrier.

Describe, including the use of sensors, how a microprocessor controls this operation.

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11 Maria, the A level students' secretary, has been given the task of creating a database. It will store the records of each subject taught and the records of the teachers involved. She has decided to produce a relational database.

The **Teacher** records will have the fields **Teacher_ID**, **Family_name**, **First_name**, **Subject_ID** and **Number_of_classes**. The **Subject** records will have the fields **Subject_code**, **Subject_name**, **Subject_level** and **Number_of_lessons**.

(a) Complete the diagram below to show how the tables will be combined.

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(b) Using the design of your database from part **(a)**, describe how you would create it.

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12 A government database stores the licence plates of cars. In this particular country they all follow the same pattern, e.g.

BG136KG
CD125FH
FT342LM
NQ439SR

Apart from a presence check, describe **two** appropriate validation checks which could be applied to licence plates. For each check give an appropriate example of invalid data that would be rejected. Each example must be different.

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13 IT professionals often use command line interfaces (CLIs) to communicate with computers. Office workers, however, prefer graphical user interfaces (GUIs). In the home, gesture based interfaces (GBIs) are increasingly being used.

Evaluate these three types of interface.

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14 Many students use the internet in school to search for information to help with their classwork.

Apart from e-safety, discuss the benefits and drawbacks of students using the internet for this purpose.

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