

Data processing and information – AS 9626

1. Nov/2021/Paper_11/No.1

Phoebe is collecting data to find the level of pollution in a local river.

(a) Tick the most accurate statement regarding data.

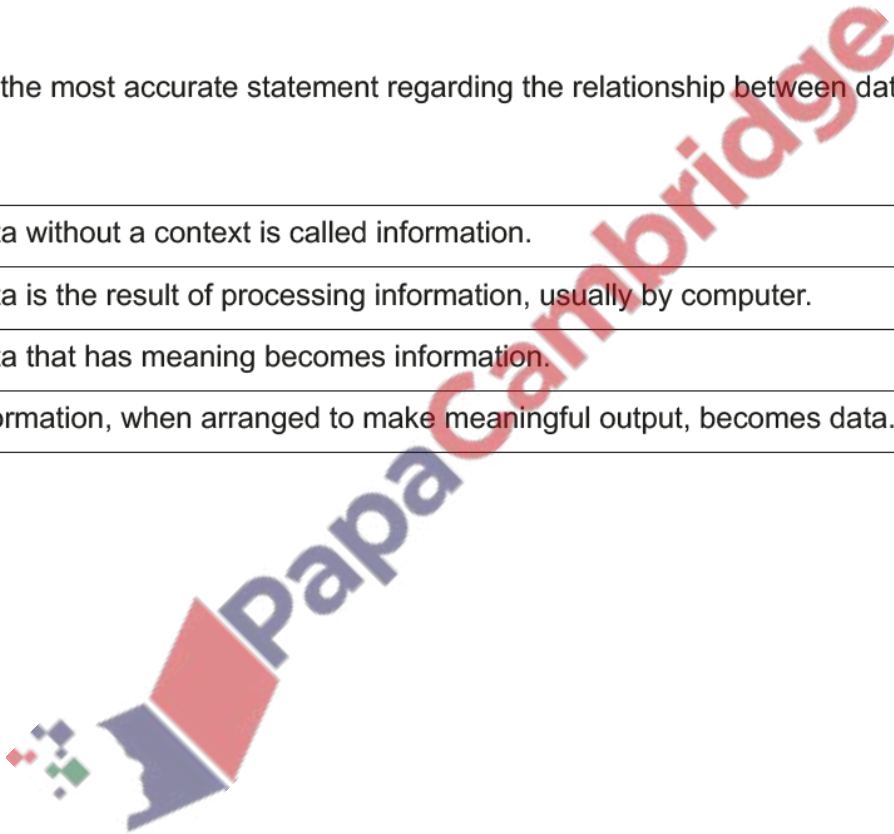
	✓
A group of facts which are used in context is called a set of data.	
Data can only consist of text and numbers.	
Understanding that Paris, London and Berlin are capital cities of countries in Europe makes this a set of data.	
Data cannot be interpreted until it has a context.	

[1]

(b) Tick the most accurate statement regarding the relationship between data and information.

	✓
Data without a context is called information.	
Data is the result of processing information, usually by computer.	
Data that has meaning becomes information.	
Information, when arranged to make meaningful output, becomes data.	

[1]



Phoebe will use sensors as direct data sources to collect the data. She will place sensors in the river and collect the readings from a computer.

(c) Describe the benefits of gathering data from direct data sources in this scenario.

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(d) Describe the drawbacks of gathering data from direct data sources in this scenario.

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(b) Companies rely on the quality of the information that they use to make decisions.

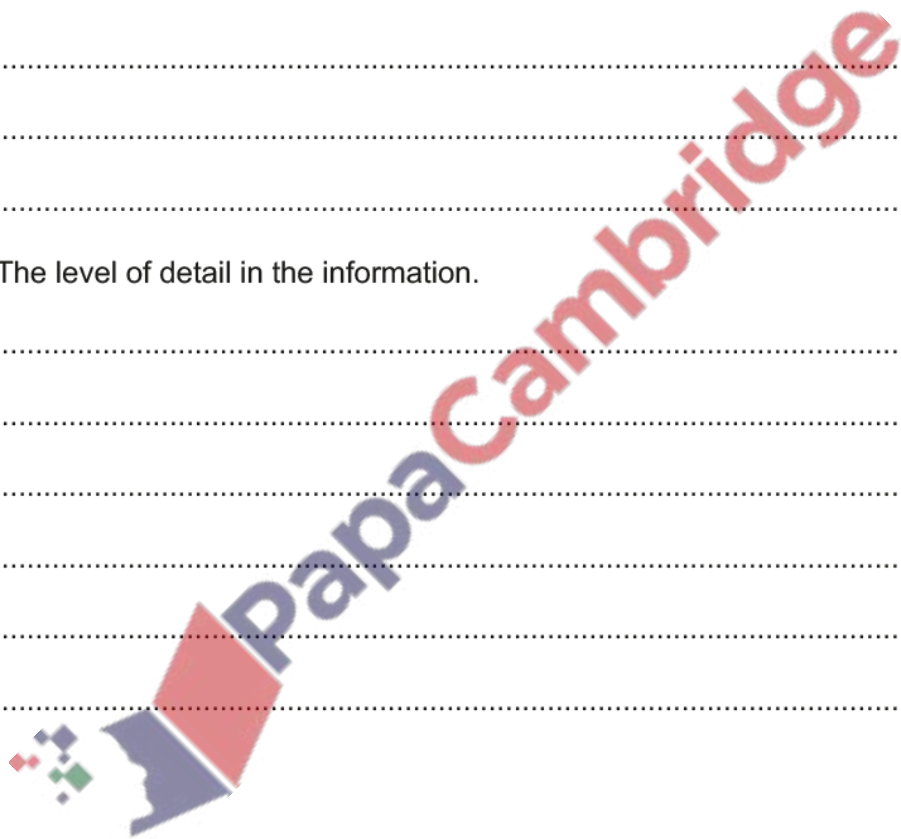
Describe how each of the following can affect the quality of the information. In your answers, give detail about the possible effects on companies.

(i) The age of the information.

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(ii) The level of detail in the information.

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Coding of data, such as G for green and B for blue, has some advantages and disadvantages.

(a) Tick the most accurate statement regarding an advantage of coding data in this way.

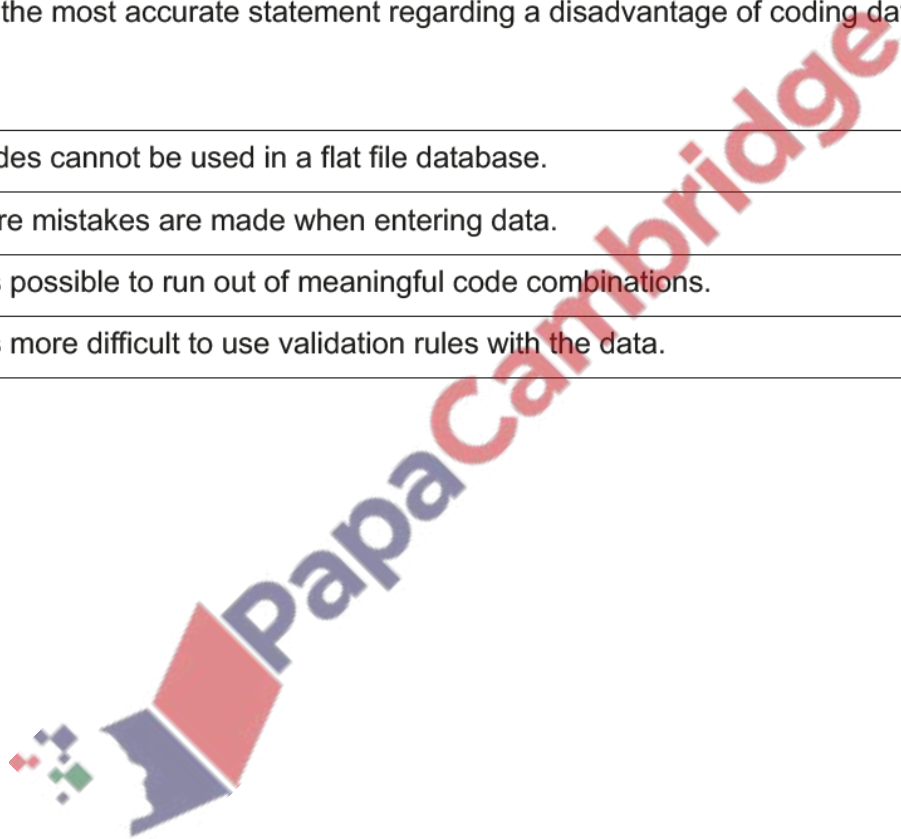
	✓
Data can become more difficult to interpret.	
All codes are easy to forget.	
It never leads to the coarsening of data.	
Coding of data means time is saved when entering data.	

[1]

(b) Tick the most accurate statement regarding a disadvantage of coding data in this way.

	✓
Codes cannot be used in a flat file database.	
More mistakes are made when entering data.	
It is possible to run out of meaningful code combinations.	
It is more difficult to use validation rules with the data.	

[1]



7. Mar/2021/Paper_12/No.3

A printed newspaper is regarded as a source of static data.

(a) Give **two** other examples of sources of static data.

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 [1]

(b) Explain why a printed newspaper is regarded as a source of static data.

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 [2]

8. June/2021/Paper_11/No.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]

9. June/2021/Paper_11/No.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.

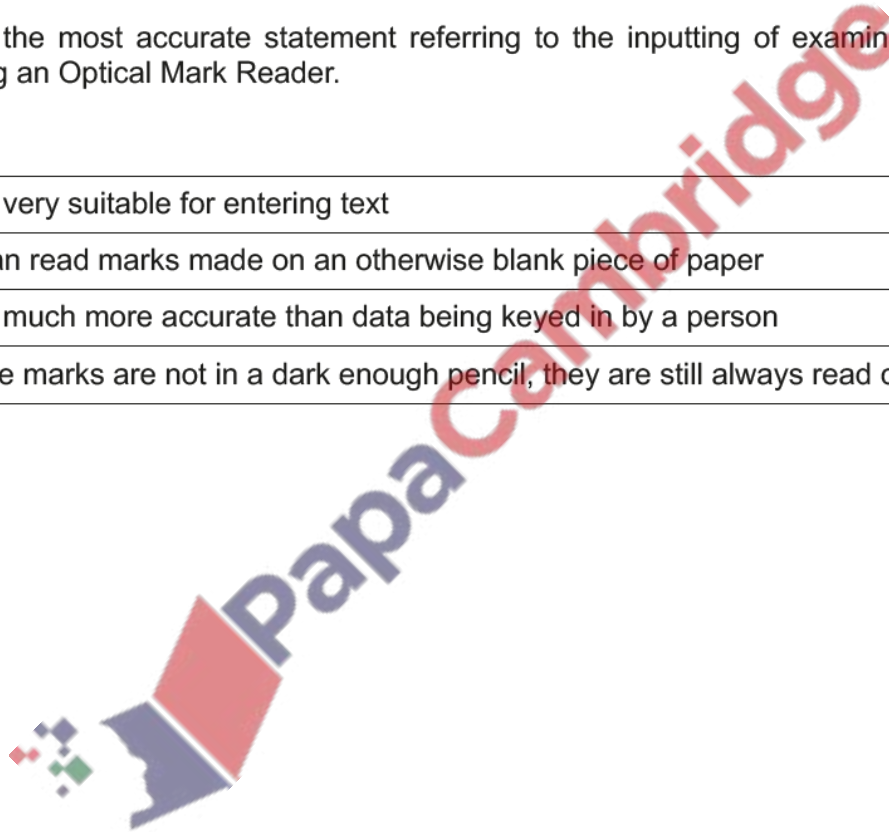
	✓
It is a lot slower to enter large amounts of text than an inexperienced user typing it in	
It can be used to read ordinary handwriting	
It is always completely accurate, with no mistakes being made	
It is more expensive to scan the text than to pay someone to type in the text	

[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]



10. June/2021/Paper_12/No.1

(a) Tick the most accurate statement referring to the use of a length check when validating data.

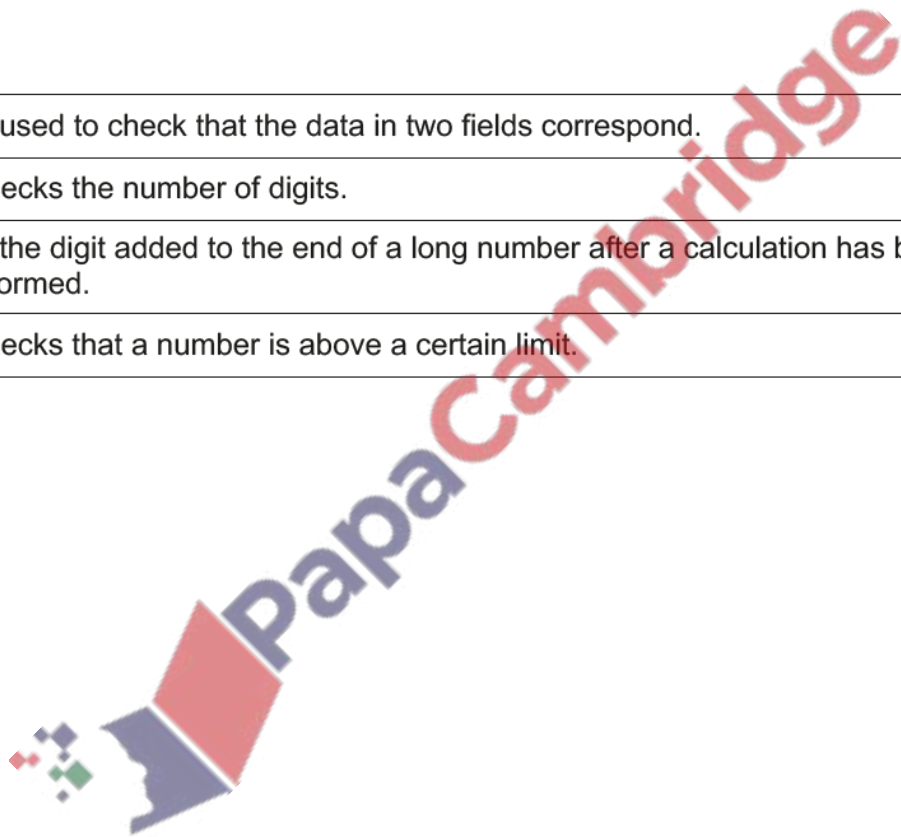
	✓
It returns an error message if a data item is not in a lookup list.	
It checks to make sure a data item is within an upper limit and a lower limit.	
It checks that a data item consists of a set number of characters, not more or less.	
It is only used to check numbers.	

[1]

(b) Tick the most accurate statement referring to the use of a check digit when validating data.

	✓
It is used to check that the data in two fields correspond.	
It checks the number of digits.	
It is the digit added to the end of a long number after a calculation has been performed.	
It checks that a number is above a certain limit.	

[1]



A manager wants to code the data about clothes sold in a shop, ready for storing in a database. The table shows the manager’s first attempt.

Category	Data
Colour	Light green (G), Black (B), Dark green (G), Red (R)
Type of clothing	Shirt (S), Skirt (S), Trousers (T), Pullover (P)
Size (ins)	25 – 30 (S), 31 – 36 (L), 37 – 42 (XL), 43 – 48 (XXL)
Brand	Astio (A), Dasiap (D), Utap (U), Gumho (G)

(a) Give **three** different reasons why the manager wants the data coded.

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[3]

(b) Give **three** different drawbacks of coding the data as shown in the table.

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[3]

(c) Describe **two** different improvements which could be made to this coding system.

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[2]

- (a) A researcher has to choose between using a direct data source or an indirect data source. The data collected may be confidential and may need to be encrypted when sent over the internet.

Tick the statement that best describes the use of a direct data source.

	✓
Searching the World Wide Web to find weather data	
Interviewing residents living on a street to find out how busy the traffic on the street is	
Examining the census results for previous years	
Looking at a list of names and addresses of everyone who is registered to vote	

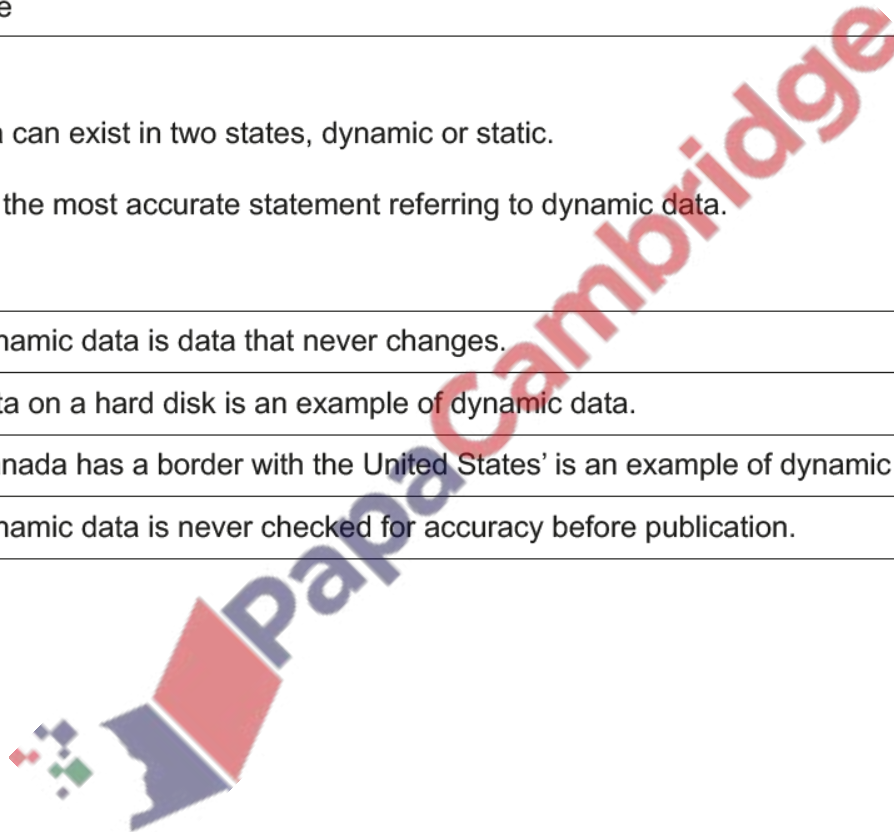
[1]

- (b) Data can exist in two states, dynamic or static.

Tick the most accurate statement referring to dynamic data.

	✓
Dynamic data is data that never changes.	
Data on a hard disk is an example of dynamic data.	
'Canada has a border with the United States' is an example of dynamic data.	
Dynamic data is never checked for accuracy before publication.	

[1]



13. Nov/2020/Paper_11/No.5

Louise, a teacher, has been asked to write a text book and will need to submit a sample chapter to the publishers. Before she submits this chapter, she wants to proofread it.

Describe how she should visually proofread this chapter.

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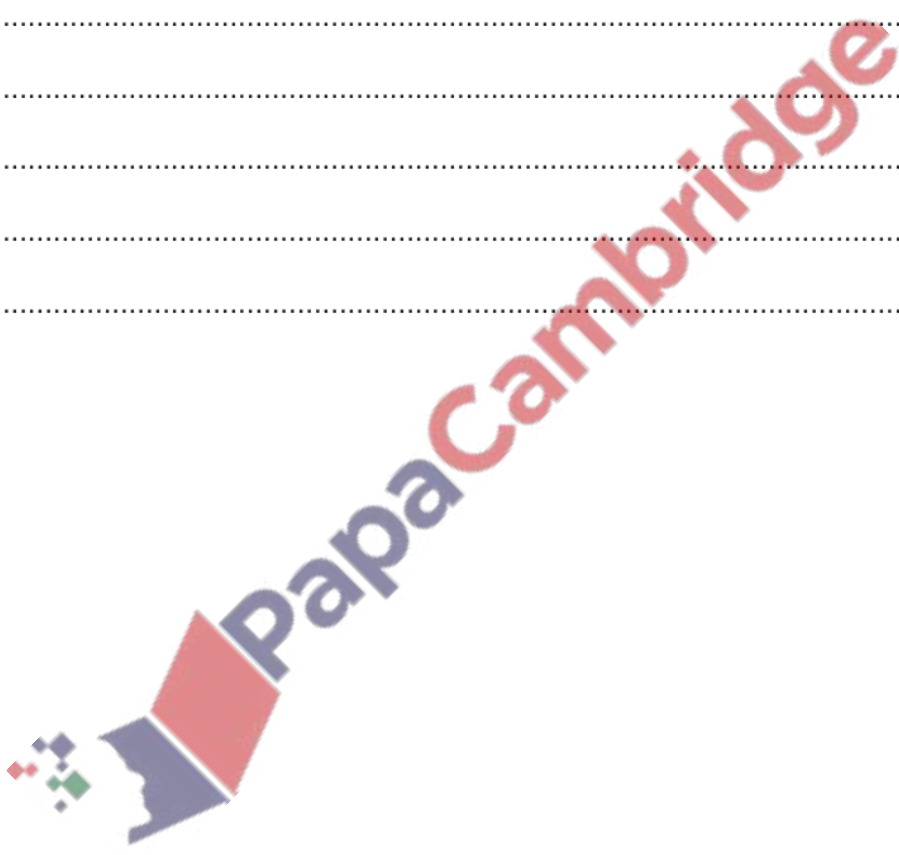
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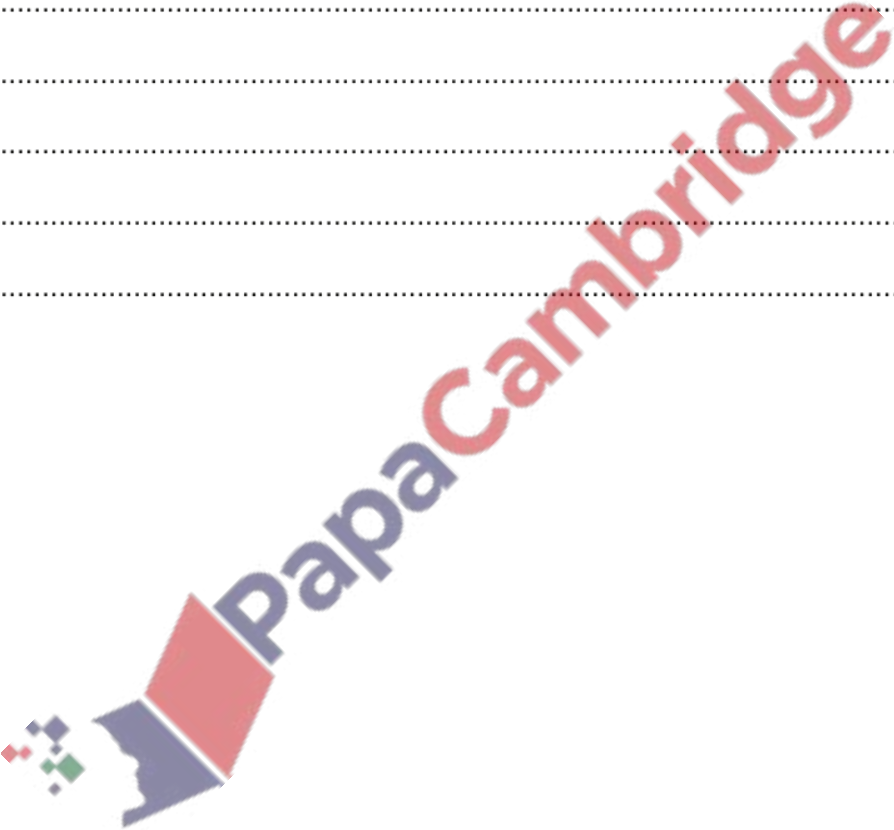
15. Nov/2020/Paper_13/No.5

Louise, a teacher, has been asked to write a text book and will need to submit a sample chapter to the publishers. Before she submits this chapter, she wants to proofread it.

Describe how she should visually proofread this chapter.

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[4]



(a) Tick the most accurate statement referring to batch processing.

	✓
The processing of data usually takes place when the computing resources are very busy	
It is used in the control of traffic lights	
It typically involves the use of sensors and control systems	
It is typically used in the printing of electricity bills	

[1]

(b) Tick the most accurate statement referring to real time processing.

	✓
It would be suitable for controlling a car park barrier	
It does not require an immediate response	
It is never used 24 hours a day for the same task	
It is where a group of transactions is collected over a period of time before being processed	

[1]

Theatres often use interactive processing to allow customers to book seats.

(c) Describe what is meant by the term interactive processing.

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(d) Give reasons why interactive processing would be used instead of batch processing for booking seats in a theatre.

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17. Mar/2020/Paper_12/No.5

Many businesses code data when storing information. A shop which sells shirts may wish to code the size and colour of each shirt, e.g. a yellow shirt with chest size 100 cm would be coded as 100Y.

Discuss the advantages and disadvantages of coding data.

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Data on a CD ROM is regarded as static data.

Using another appropriate example, describe the characteristics of static data.

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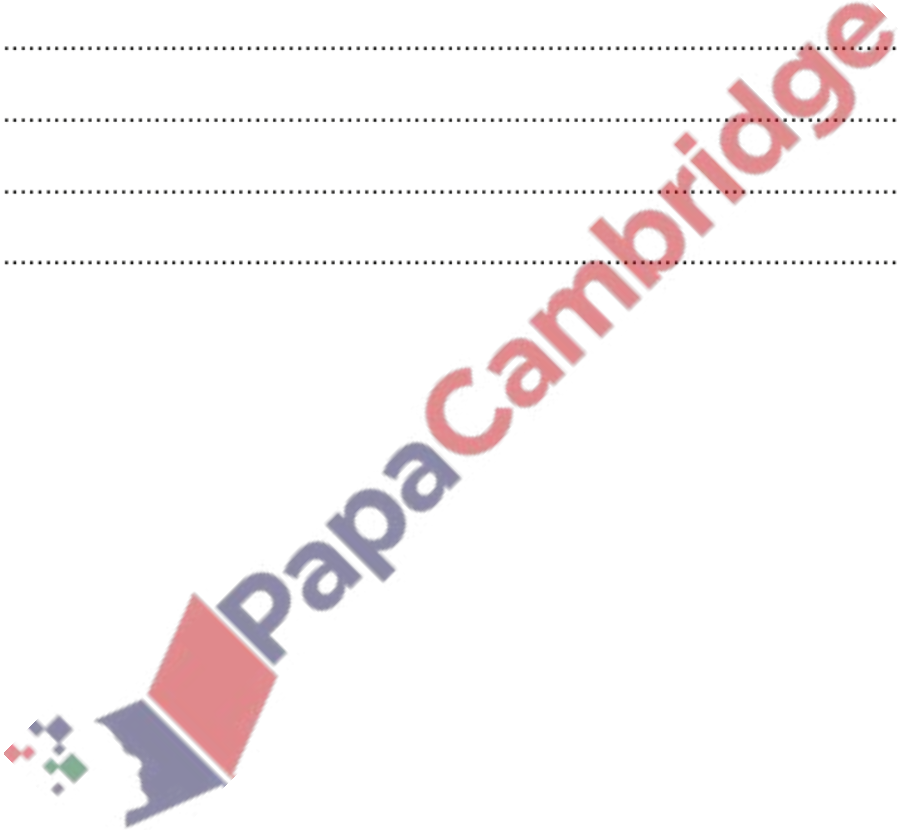
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For each of the **two** tables below, tick the most accurate statement referring to symmetric encryption.

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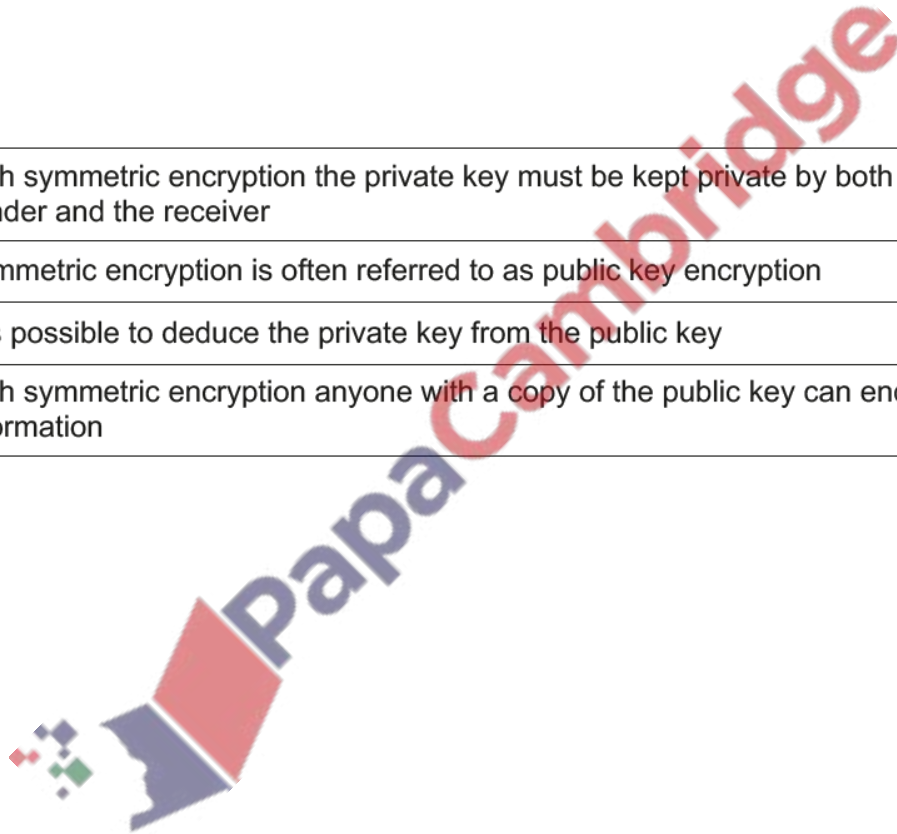
	✓
Symmetric encryption is a newer method of encryption compared to asymmetric encryption	
With symmetric encryption the public key is used to encrypt the data	
With symmetric encryption you have to use the same key to encrypt every message	
Symmetric encryption only uses a single private key	

[1]

(b)

	✓
With symmetric encryption the private key must be kept private by both the sender and the receiver	
Symmetric encryption is often referred to as public key encryption	
It is possible to deduce the private key from the public key	
With symmetric encryption anyone with a copy of the public key can encrypt information	

[1]



23. June/2020/Paper_12/No.3

Using numerical examples, describe what is meant by the following terms.

Data

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Information

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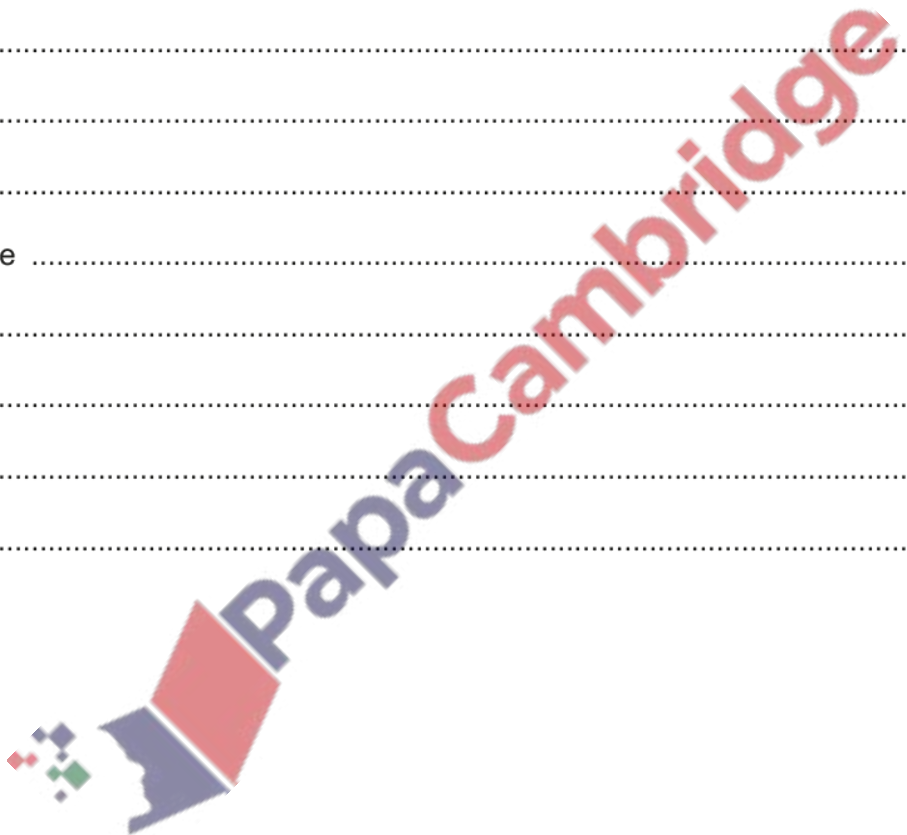
Knowledge

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[6]

