

A LEVEL 9626

Information Technology

Paper 1 Topical

WITH MARK SCHEME

JUNE 20%+ – JUNE 20&&

For Examinations to be held in



CAIE 2023-2025 Syllabs



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Preface

CAIE A Level Information Technology (9626) as a subject helps students come up with current and emerging computing technologies along with applying their learning to develop computer based problems using programming.

This book being need of the hour serves students in dual ways.

It contains a collection of questions arranged chapter-wise so that students have a full opportunity to test their understanding of each chapter and at the end of each section I have provided the solutions to each of those questions.

I hope this book serves its purpose and helps students succeed.

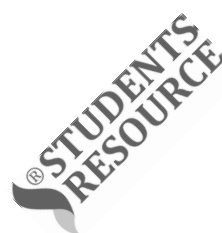
About the Author

Since graduating in Information Technology, Ali Akram has worked with numerous software platforms and multiple programming languages. He is a professional programmer and a designer too.

He along with his team has co-founded multiple startups and has a vast client base both local and abroad.

As a teacher he has contributed a lot to this field. His teaching career is decorated with dedication and success stories of his students. He is keen to launch new methods of keeping his students engaged and to ease methods of learning. Currently, he is a proud member of Bridge Academy. He can be reached through his social media page

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Acknowledgment

The completion of this undertaking could not have been possible without the participation and assistance of so many people whose names may not all be enumerated. Their contributions are sincerely appreciated and gratefully acknowledged.

However, the group would like to express their deep appreciation and indebtedness particularly to the following:

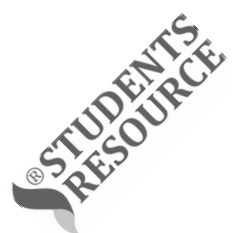
Mr. Taj Din - my grandfather, my mother, my brother Husnain and sisters for their endless support, kind and understanding spirit during my phase of hard work.

To all relatives, friends and others who in one way or another shared their support, either morally, financially and physically, thank you.

Above all, to the Great Almighty, the author of knowledge and wisdom, for His countless love and utmost kindness.

I Thank You All..

Ali Akram



1 9626/12/F/M/17/Q1

Tick the **four** most accurate statements regarding the quality of information.

	✓
The more information that is collected the higher its quality.	
Data collected from a third party always becomes high quality information.	
The accuracy of the information collected affects its quality.	
Information which costs a lot to collect is always high quality information.	
A great deal of detail can sometimes lead to poor quality information.	
Irrelevant information leads to poor quality information.	
The problems arising from a lack of good quality information can be overcome by making your filters more refined.	
Good quality of information is always obtained from small groups of people.	
Information collected 100 years ago is always good quality information.	
The more complete the collected information is, the better its quality.	

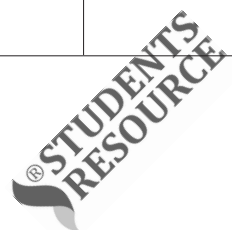
[4]

2 9626/12/F/M/17/Q2

Tick the **four** statements which most accurately refer to encryption.

	✓
Encryption is used by hackers to discover passwords.	
Encrypting a hard disk prevents viruses from deleting the information.	
Encryption always makes use of a public key and a private key.	
Encryption is the scrambling of the text in a message.	
Encryption is the process of encoding messages in such a way that only authorised parties can understand them.	
Encryption prevents messages from being intercepted.	
Encrypted information can only be understood if decrypted.	
Encryption has speeded up internet browsing by using secure sites.	
The recipient can only decrypt the message with the key provided by the originator.	
All memory sticks are encrypted.	

[4]



5 9626/12/F/M/18/Q1

Tick the **four** most accurate statements regarding knowledge, data and information.

	✓
Knowledge is remembering a set of facts.	
5, 10, 15, 20 are examples of information.	
Knowledge is just learning items of data by rote.	
Knowledge never requires the understanding of information.	
Knowledge is the use of information to solve problems.	
Information is data that needs to be processed to give it meaning.	
Understanding that 25 is the fifth answer in the five times table requires knowledge.	
Tacit knowledge is knowledge that is easy to pass on to someone else.	
A list of all the books written by Shakespeare is just raw data.	
Being aware that Pride and Prejudice was not written by Shakespeare requires knowledge.	

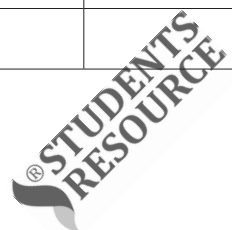
[4]

6 9626/12/F/M/18/Q2

Tick the **four** most accurate statements regarding encryption protocols.

	✓
None of the web browsers currently in use support TLS.	
SSL stands for Secure Socket Layer.	
TLS was used before SSL came into being.	
TLS and SSL are protocols that provide security of communication in a network.	
SSL uses asymmetric cryptography only.	
Encryption protocols prevent hackers from intercepting a message.	
TLS stands for Transport Layer Socket.	
Client-server applications use TLS in a network to try to prevent eavesdropping.	
Encryption protocols enable credit card payments to be made securely.	
SSL does not require a handshake to be carried out.	

[4]



11 9626/12/F/M/19/Q7

Mumbai Stores is a company which has a chain of shops. The company stores the customers' reference number, and the value of the goods they have purchased, in a transaction file. Any payments the customers have made on their account at the end of the month are also stored in the same file.

Parts of the Transaction file and Master file are shown.

The Goods_bought field contains only the value of goods bought using the account's credit facilities.

The Master file shows the customers reference number, the money they owe from the previous month (Old_balance) and the money they now owe (New_balance).

The New_balance has to be calculated by using the Old_balance, Goods_bought and any Payment made. All these values are in rupees.

Transaction file

Customer_ref_no	Goods_bought	Payment
943201	5500	4000
256431	3800	3800
319852	9200	10000
433303	3200	5200
590871	4300	6800
612759	3700	3700
650897	2300	2300
698915	4000	6600
751654	4400	4400
804782	5200	8200

Master file

Customer_ref_no	Old_balance	New_balance
256431	0	
319852	10000	
433303	5000	
590871	4500	
599812	0	
612759	0	
650897	0	
678945	6800	
698915	2600	
712356	5100	
751654	0	
804782	4200	
943201	0	
963584	2400	



15 9626/11/O/N/19/Q1

Tick the **four** most accurate statements regarding the benefits of gathering data from direct data sources.

	✓
You only have to gather as much or as little data as you need	
It allows data to be gathered from subjects to which the data gatherer does not have physical access	
You can obtain the data faster than using an indirect data source	
You have full control over the method used to collect the data	
A much larger sample size can be used than is possible with indirect data sources	
A direct data source is quicker to search	
There may be an opportunity to sell the data to other people for them to use	
You do not have to spend time interviewing people or giving out questionnaires	
A CD ROM of historical data is a direct data source	
The source of the data is known exactly, making it easier to judge its reliability	

[4]

16 9626/12/O/N/19/Q1

Tick the **four** most accurate statements regarding gathering data from indirect data sources.

	✓
It may involve having to purchase more data loggers	
Several people would have to be employed to carry out interviews	
It always takes longer to gather data from an indirect data source	
It is impossible to ensure that data was collected from a representative sample	
The data may be out of date	
The sample size is always smaller than if you used a direct data source	
The purpose for which data was collected originally may be quite different from the purpose of the current research	
There may be no data available. The data required has simply never been recorded	
The coding used in the data is never explained	
Compared to direct data sources, using indirect data sources is always very expensive when preparing and carrying out the gathering of data	

[4]



21 9626/12/M/J/20/Q1

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

(a)

	✓
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]



22 9626/12/M/J/20/Q3

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

Data

.....

.....

.....

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Information

.....

.....

.....

.....

Knowledge

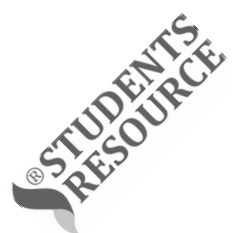
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.....

[6]



23 9626/13/M/J/20/Q5

Companies often carry out investigations into the public’s likes and dislikes. Investigations such as this can be done using direct sources or indirect sources of information.

(a) Describe the advantages of gathering data from indirect data sources.

..... [4]

(b) Describe the disadvantages of gathering data from indirect data sources.

..... [4]



