

MARKER CODE				



STUDENT ENROLMENT NUMBER (SEN)									

TONGA FORM SIX CERTIFICATE 2023

COMPUTING AND ICT

QUESTION AND ANSWER BOOKLET

Time allowed: 2 Hours

INSTRUCTIONS:

- Write your **Student Enrolment Number (SEN)** on the top right-hand corner of this page.
- This paper consists of **NINE SECTIONS** and is out of 70 weighted scores.

SECTION	STRANDS	TOTAL SKILL LEVEL
ONE	IMPORTANT TRENDS IN ICT	9
TWO	INFORMATION SYSTEMS (IS)	10
THREE	ICT INFRASTRUCTURE	5
FOUR	DIGITAL DESIGN	11
FIVE	COMPUTER PROGRAMMING	8
SIX	MICROPROCESSOR PROGRAMMING	10
SEVEN	SAFE PRACTICES IN ICT	7
EIGHT	SOCIAL ISSUES	8
NINE	ENVIRONMENTAL ISSUES	2
TOTAL		70

- Answer ALL QUESTIONS. Write your answers in the spaces provided in this booklet.
- Use a **BLUE** or **BLACK** ball point pen only for writing. Use a pencil for drawing if required.
- If you need more space for answers, ask the supervisor for extra paper. Write your **Student Enrolment Number (SEN)** on each additional sheet, number the questions clearly and insert them in the appropriate places in this booklet.
- Check that this booklet contain pages **2-19** in the correct order and that pages 18-19 have been deliberately left blank.

YOU MUST HAND IN THIS BOOKLET TO THE SUPERVISOR BEFORE YOU LEAVE THE EXAMINATION ROOM.

SECTION ONE:**IMPORTANT TRENDS IN ICT**

1. In recent years, the integration of ICT in healthcare sectors has sparked a revolutionary transformation worldwide.

State an existing ICT trend in the area of Health here in Tonga.

Skill level 1	
1	
0	
NR	

2. Education plays a fundamental role in the development and progress of any nation, empowering individuals with knowledge and skills essential for personal and societal advancement.

Outline the significance for the changes in ICT in the improvement of education here in Tonga.

Skill level 2	
2	
1	
0	
NR	

3. The rapid evolution of ICT has brought about significant changes across various industries worldwide, and Tonga, is no exception.

Discuss the economic effects of the existing ICT trends that are visible here in Tonga.

Skill level 4	
4	
3	
2	
1	
0	
NR	

4. Promoting existing ICT trends locally comes with its own sets of challenges, which must be addressed to ensure the effective and sustainable integration of technology in the country. Outline the concerns in promoting existing ICT trends here in Tonga.

Skill level 2	
2	
1	
0	
NR	

SECTION TWO:

INFORMATION SYSTEMS (IS)

Understanding the significance of Information Systems (IS) and their roles is vital for businesses and individuals looking to thrive in the ever-evolving digital landscape.

1. Provide a definition of data.

Skill level 1	
1	
0	
NR	

2. State a basic component of Information Systems (IS).

Skill level 1	
1	
0	
NR	

3. Provide an example of a recognized type of Information Systems (IS).

Skill level 1	
1	
0	
NR	

4. In the ever-evolving landscape of education, technology plays a very important role in shaping modern learning environments.

Elaborate on the use of Information Systems (IS) in an educational setting.

Skill level 3	
3	
2	
1	
0	
NR	

- Discuss the features to consider as given in the requirement above.

[illegible]

Skill level 4	
4	
3	
2	
1	
0	
NR	

SECTION THREE:**ICT INFRASTRUCTURE**

ICT Infrastructure plays a vital role in today's digital world. It forms the backbone of digital communication and data management for businesses, organizations and individuals.

1. Name a type of data communication network.

	Skill level 1	
	1	
	0	
	NR	

2. Identify a fundamental characteristic of wireless technology.

	Skill level 1	
	1	
	0	
	NR	

3. Differentiate between cable and wireless technologies in their utilization within an ICT Infrastructure.

	Skill level 3	
	3	
	2	
	1	
	0	
	NR	

DIGITAL DESIGN

1. The diagram below is a sample school newsletter from the school website. Briefly explain the essential graphic design requirements that are used in this school newsletter.

[illegible]

Skill level 3	
3	
2	
1	
0	
NR	

2. Digital media device makes the process of designing and distributing of school newsletters easier and more effectively communicated.

Name a type of digital device that can be used for this.

Skill level 1	
1	
0	
NR	

3. Using of digital media together with graphic design applications help designers bring their creative visions and innovation to life.

Name a key feature of a graphic design application you used in your Internal Assessment (IA) task this year.

Skill level 1	
1	
0	
NR	

4. Audio and video processing applications play a very important role in enhancing and improving of media content.

State a key feature for each of the following application;

- a. audio processing application.

Skill level 1	
1	
0	
NR	

- b. video processing application.

Skill level 1	
1	
0	
NR	

5. Explain the effect of application features that can be used on an audio file.

Skill level 3	
3	
2	
1	
0	
NR	

6. Creating a website involves several parts that contribute to the development of a functional and visually attractive online presence.

State a major part of the process involved in creating a website.

Skill level 1	
1	
0	
NR	

SECTION FIVE:

COMPUTER PROGRAMMING

1.
- Numbers can be converted to different number systems according to the needs of the computer systems, programming or sometimes for digital communications.
Convert the decimal number 2023 to binary and hexadecimal.

Skill level 2

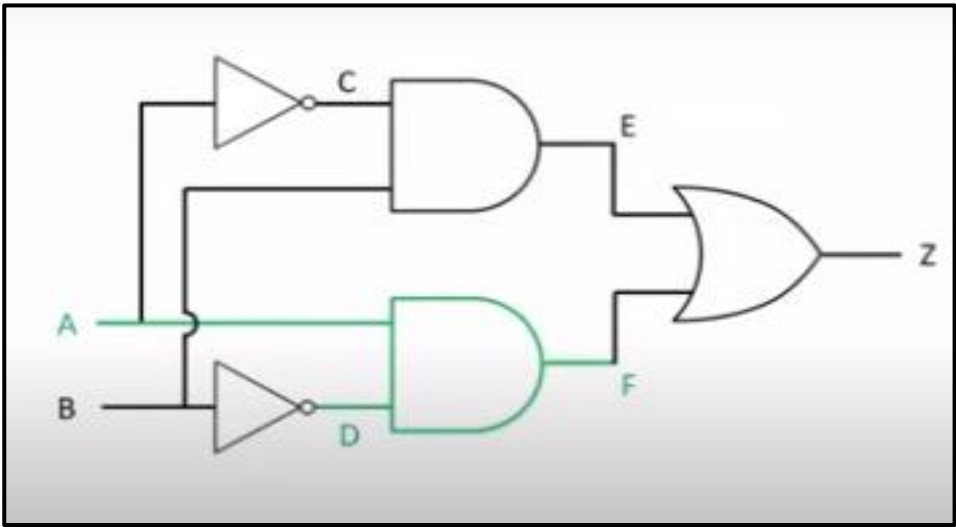
2

1

0

NR

2.
- Truth tables provide all possible input combinations for a logical function and the outputs for each.
Complete the truth table for the basic logic circuit below, using inputs **A** and **B**.



A	B	C	D	E	F	Z
0	0					
0	1					
1	0					
1	1					

Skill level 3	
3	
2	
1	
0	
NR	

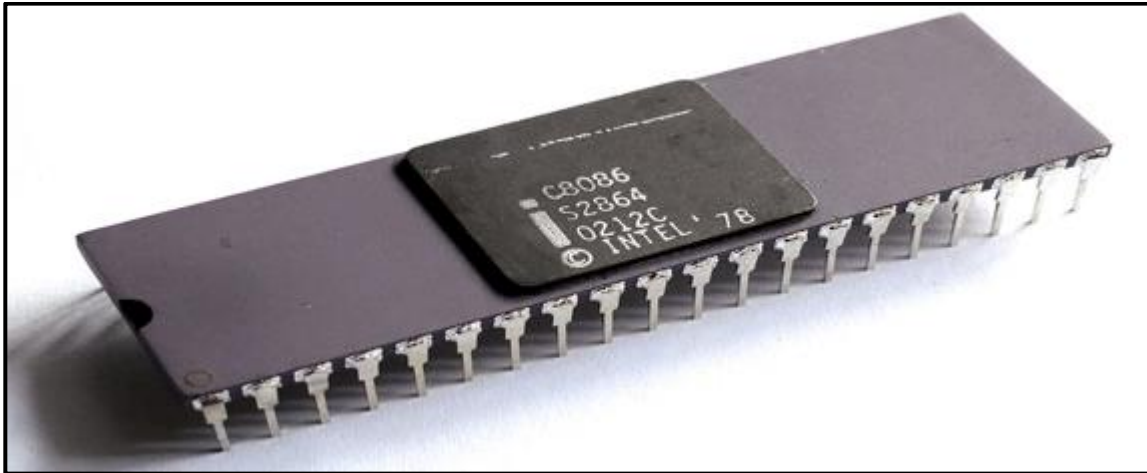
3. Computer programming involves problem-solving, creativity and logical thinking.
Explain the process involved in computer programming.

Skill level 3	
3	
2	
1	
0	
NR	

SECTION SIX:

MICROPROCESSOR PROGRAMMING

One of the most recognizable microprocessors is shown below. It's the Intel 8086 which played a significant role in shaping the computing industry.



1. State how a basic component of a microprocessor operates.

Skill level 1	
1	
0	
NR	

2. Discuss the main uses of programmable microprocessors in real life.

Skill level 4	
4	
3	
2	
1	
0	
NR	

3. A High-level language and a machine language serve different purposes when dealing with microprocessors.

a. State the purpose of a High-level language.

		Skill level 1	
		1	
		0	
		NR	

b. Describe the purpose of a machine language.

		Skill level 2	
		2	
		1	
		0	
		NR	

c. Describe the connection between High-level languages and machine languages.

		Skill level 2	
		2	
		1	
		0	
		NR	

SECTION SEVEN:

SAFE PRACTICES IN ICT

Network and internet connection security is very important for protecting data, ensuring privacy, and for the creation of a safe online environment for users.



1. Name a feature of an Internet Security that is commonly used in schools today.

Skill level 1	
1	
0	
NR	

2. Explain the primary concerns associated with Cyber Security.

Skill level 3	
3	
2	
1	
0	
NR	

3. Explain the fundamental security precautions for safeguarding both ICT users and their digital surroundings.

Skill level 3	
3	
2	
1	
0	
NR	

SECTION EIGHT:

SOCIAL ISSUES

The growing use of Information Communication Technology (ICT) has brought about huge benefits and opportunities, but also accounts to the increasing ethical concerns in Tonga today.

1. Explain the major ethical issues that arise due to the growing use of ICT

Skill level 3	
3	
2	
1	
0	
NR	

2. Outline the new issues in ICT in relation to plagiarism.

Skill level 2	
2	
1	
0	
NR	

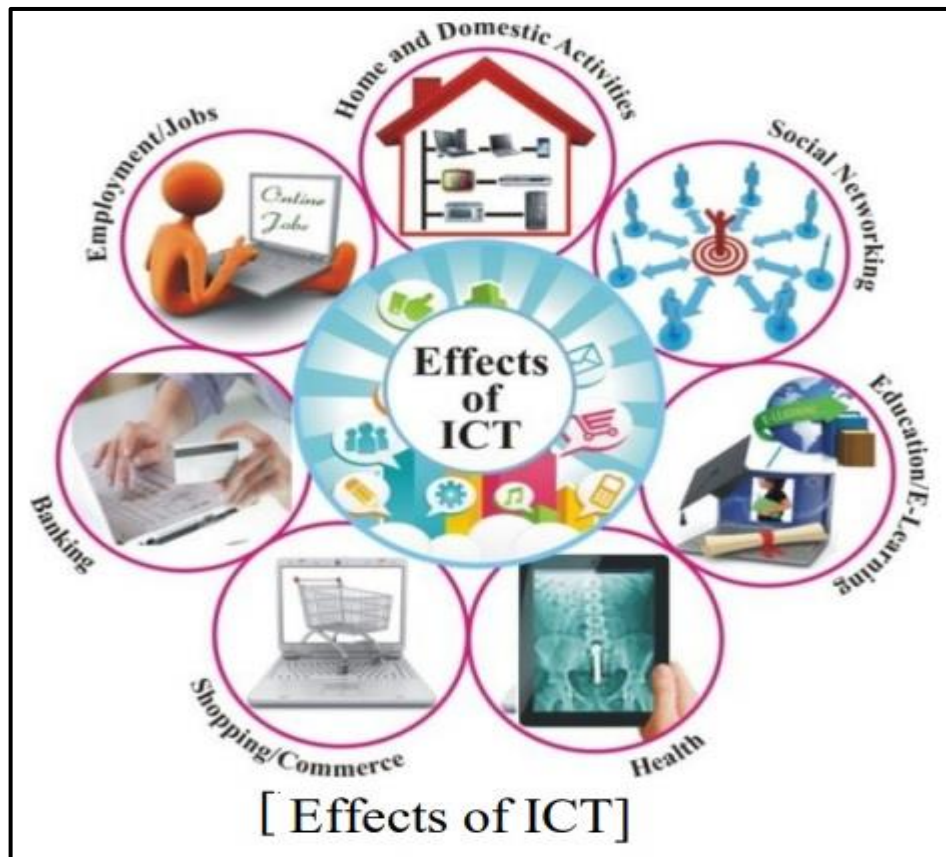
3. Explain the solutions that are implemented locally to reduce the impact of ethical concerns in ICT.

Skill level 3	
3	
2	
1	
0	
NR	

SECTION NINE:

ENVIRONMENTAL ISSUES

The diagram below presents some of the positive effects of ICT in our everyday life. However, there are also negative effects that we need to know.



1. Identify a major negative effect of ICT on the physical environment.

Skill level 1	
1	
0	
NR	

2. Name an effective solution for managing the negative effect identified in Question 1. above.

Skill level 1	
1	
0	
NR	

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