

MARKER CODE				



STUDENT ENROLMENT NUMBER (SEN)									

TONGA FORM SIX CERTIFICATE

2024

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	6
TWO	INFORMATION SYSTEMS (IS)	8
THREE	ICT INFRASTRUCTURE	7
FOUR	DIGITAL DESIGN	4
FIVE	COMPUTER PROGRAMMING	7
SIX	MICROPROCESSOR PROGRAMMING	10
SEVEN	SAFE PRACTICES IN ICT	15
EIGHT	SOCIAL ISSUES	5
NINE	ENVIRONMENTAL ISSUES	8
	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 **2-15** in the correct order and that pages 14-15 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.
- Information Communication Technology (ICT) refers to the various technological tools and resources used to handle telecommunications, information systems, digital media, network and other systems.

Apart from computers, give an example of ICT used in a school environment.

Skill level 1	
1	
0	
NR	

2.
- In recent years, advancements in ICT have significantly influenced various sectors such as Education and Health.

Outline the benefits of the changes in ICT for the improvement of health in Tonga.

Skill level 2	
2	
1	
0	
NR	

3.
- ICT had become the driving force in modern global economies, with huge positive effects on various aspects of businesses and our daily lives.

Examine the economic impact of current ICT trends in Tonga.

Skill level 3	
3	
2	
1	
0	
NR	

SECTION TWO:

INFORMATION SYSTEMS (IS)

1.
- An Information System (IS) helps manage information in an organization for decision-making and efficient operations.

Name a basic feature of Information System.

Skill level 1	
1	
0	
NR	

2.
- Developing an Information System (IS) is a complicated task and developers often face numerous challenges that can impact the success and effectiveness of the system.

Briefly explain the potential challenges faced in the development of an Information System.

Skill level 3	
3	
2	
1	
0	
NR	

3.
- An Information System (IS) implementation in a school environment involves a series of carefully planned stages.

Discuss an implementation plan for an Information System (IS) in a school.

Skill level 4	
4	
3	
2	
1	
0	
NR	

SECTION THREE:**ICT INFRASTRUCTURE**

1. 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.

Explain the purpose of an ICT Infrastructure.

Skill level 3	
3	
2	
1	
0	
NR	

2. Name a type of data transmission medium.

Skill level 1	
1	
0	
NR	

3. A key component of an ICT infrastructure is a network router.

Router



Outline the key features of a network router.

Skill level 2	
2	
1	
0	
NR	

4. It is important to be aware of the potential issues that may arise when downloading and installing software from the internet.

Identify a problem associated with downloading and installing software from the internet.

Skill level 1	
1	
0	
NR	

SECTION FOUR:

DIGITAL DESIGN

Digital media has changed how we communicate, share information, influencing cultures, businesses and societies.

1. Define ‘digital media’.

Skill level 1	
1	
0	
NR	

2. Outline the different types of digital media that you’re familiar with.

Skill level 2	
2	
1	
0	
NR	

3. State the main function of the audio device shown below.

Skill level 1	
1	
0	
NR	







Headsets

SECTION FIVE:

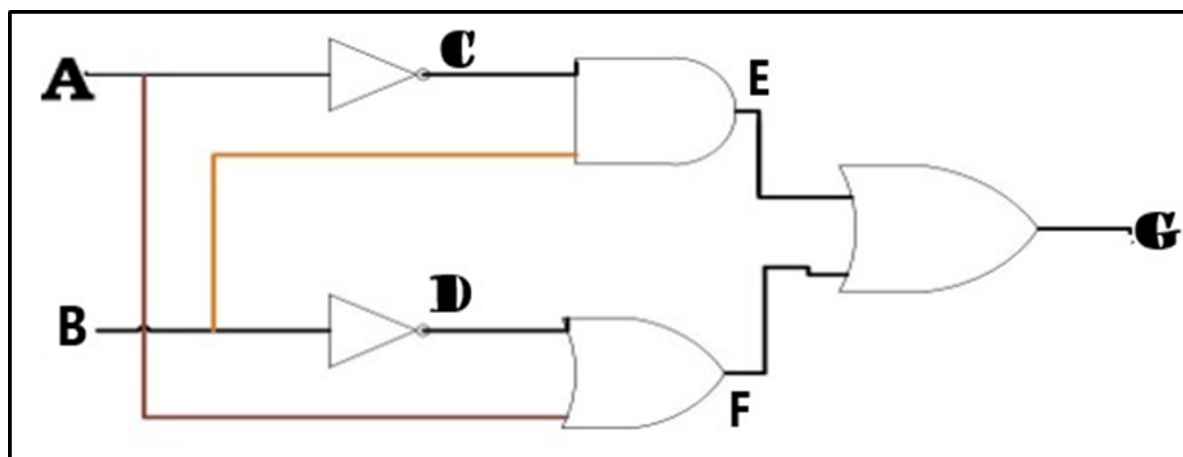
COMPUTER PROGRAMMING

- Convert the decimal number **1972** to binary then to hexadecimal number.

Decimal	Binary	Hex
1972		

Skill level 2	
2	
1	
0	
NR	

- Truth tables provides all possible input combinations for a logical function and the outputs for each. Complete the truth table for the basic logic circuit below.



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

Skill level 3	
3	
2	
1	
0	
NR	

- Control Structures and Data Types are examples of basic programming concepts that Programmers need to know.

State the **purpose** for each of the following basic concepts.

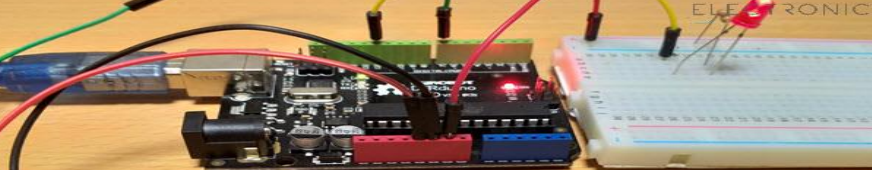
- Control Structures.

Skill level 1	
1	
0	
NR	

- Data Types.

Skill level 1	
1	
0	
NR	

MICROPROCESSOR PROGRAMMING

- 
- Example of how to use an Audio sensor with an Arduino board for a school project.

- [illegible]

Skill level 1	
1	
0	
NR	

b. Describe the purpose of a High-Level Language.

Skill level 2	
2	
1	
0	
NR	

3. A programmable microprocessor is a small, adaptable chip that runs instructions to perform various tasks.
Explain the concept of controlling a programmable microprocessor to carry out a simple task.

Skill level 3	
3	
2	
1	
0	
NR	

SAFE PRACTICES IN ICT

- a. Define 'Cyber Security'.

Skill level 1	
1	
0	
NR	

-
-

Skill level 1	
1	
0	
NR	

- Describe the main features of Physical Security.

Skill level 2	
2	
1	
0	
NR	

- a. Discuss the main concerns related to cybersecurity.

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Skill level 4	
4	
3	
2	
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0	
NR	

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[illegible]

SECTION EIGHT:

SOCIAL ISSUES

Today, as technology continues to advance and integrate deeply into our daily lives, a range of social issues have emerged affecting individuals and communities.



1. State a known social issue regarding cyber-bullying that you know.

Skill level 1	
1	
0	
NR	

2. Explain the cultural effects of unethical behaviour in ICT.

[illegible]

Skill level 3	
3	
2	
1	
0	
NR	

- Identify a common measure that can be used to reduce the impact of ethical concerns in ICT.

Skill level 1	
1	
0	
NR	

SECTION NINE:

ENVIRONMENTAL ISSUES

As the use of ICT continues to expand rapidly, it is very important to address its role in climate change. Understanding how this growth affects the environment is essential for developing effective measures and sustainable plans to reduce its impact.



Source: <https://www.linkedin.com/pulse/sustainability-industry-reducing-environmental-vis7c>

1. State a known impact of the growing use of ICT in relation to climate change.

Skill level 1	
1	
0	
NR	

2. Explain the commonly used management practices for managing e-waste at your school.

Skill level 3	
3	
2	
1	
0	
NR	

3. State a key measure being implemented in Tonga to address environmental concerns related to ICT.

Skill level 1	
1	
0	
NR	

4. Explain the key components of a sustainable plan for addressing the environmental effects of ICT.

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