

MARKER CODE				



STUDENT ENROLMENT NUMBER (SEN)									

TONGA FORM SIX CERTIFICATE 2019

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 QUESTIONS** and is out of 70 Weighted score.

QUESTIONS	TOPICS	TOTAL SKILL LEVEL
ONE	IMPORTANT TRENDS IN ICT	4
TWO	INFORMATION SYSTEMS (IS)	5
THREE	ICT INFRASTRUCTURE	17
FOUR	DIGITAL DESIGN	5
FIVE	COMPUTER PROGRAMMING	17
SIX	MICROPROCESSOR PROGRAMMING	4
SEVEN	SAFE PRACTICES IN ICT	5
EIGHT	SOCIAL ISSUES	6
NINE	ENVIRONMENTAL ISSUES	7
	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 spaces 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 contains pages **2-19** in the correct order and that pages 17-19 has been deliberately left blank.

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

QUESTION ONE: IMPORTANT TRENDS IN ICT

Shown below are known changes (shifts) in Small and Medium-sized Enterprises (SME) Market resulting from ICT trends.

Use the Information below to answer the questions that follow.



Source: http://kotelnikov.biz/coach/ict_trends_market_shifts.html

1. State an example of ICT.

Skill level 1	
1	
0	
NR	

2. Explain the contributions made by existing ICT trends to our local economy.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION TWO: INFORMATION SYSTEMS (IS)

“To implement a computer Information System (IS) for a school can bring lots of benefits”. Present your understanding of IS by;

1. Defining;

i. Information

Skill level 1	
1	
0	
NR	

ii. System.

Skill level 1	
1	
0	
NR	

3. Explain the role and use of IS in a school environment.

Skill level 3	
3	
2	
1	
0	
NR	

4. The network will be using both cable and wireless technologies.

Clearly state a basic feature of :

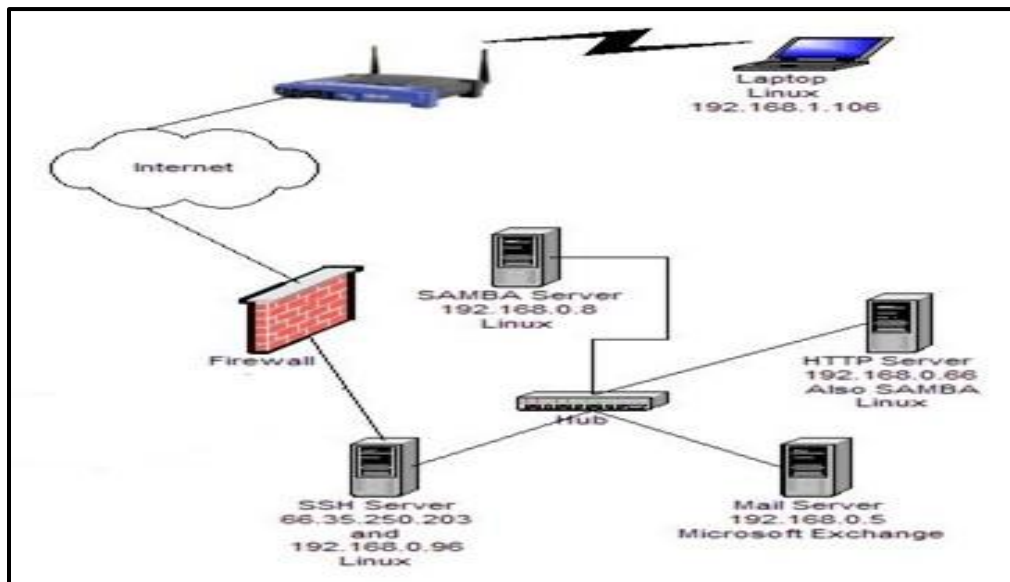
- i. cable technology

Skill level 1	
1	
0	
NR	

- ii. wireless technology

Skill level 1	
1	
0	
NR	

5. One very important device required in the network is a Firewall which is shown in the diagram below.



Explain the main requirement for a Network Firewall.

Skill level 3	
3	
2	
1	
0	
NR	

- Explain the main concerns when downloading and installing a software from the internet.

Skill level 3	
3	
2	
1	
0	
NR	

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-
-
-
-
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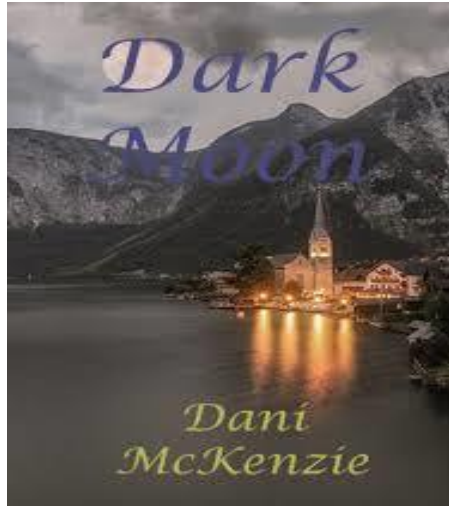
Skill level 4	
4	
3	
2	
1	
0	
NR	

QUESTION FOUR: DIGITAL DESIGN

Study the picture below and answer the questions that follow.

1. A request by a publishing company to use their book cover below to design a better new cover for their new book.

Use the book cover below and outline the elements of a good graphical design you could use for an improvement.



Skill level 2	
2	
1	
0	
NR	

2. The publishing company also requested that you design a website for them.

Explain the elements of a good website design.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION FIVE: COMPUTER PROGRAMMING

1. State the purpose of the following programming concepts.

a. Control structures

Skill level 1	
1	
0	
NR	

b. Data types

Skill level 1	
1	
0	
NR	

c. Syntax

Skill level 1	
1	
0	
NR	

2. Define the following programming terms;

a. Program design

Skill level 1	
1	
0	
NR	

b. Program bugs

Skill level 1	
1	
0	
NR	

3. Convert the hexadecimal value **CAB** to decimal.

Skill level 1	
1	
0	
NR	

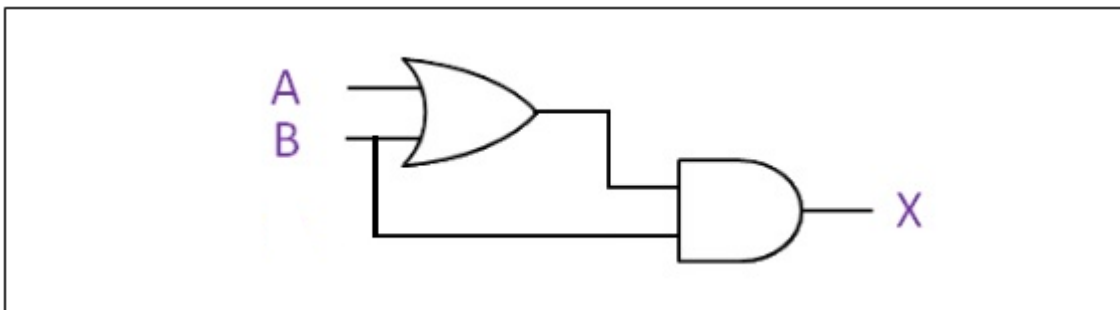
4. Describe the relationship between logic gates and digital circuits.

Skill level 2	
2	
1	
0	
NR	

5. Write the pseudocode that can present the solution for finding the smaller number between 2 numbers.

Skill level 2	
2	
1	
0	
NR	

6. Use the logic gate given below to complete the truth table.



A	B		
0	0		
0	1		
1	0		
1	1		

Skill level 3	
3	
2	
1	
0	
NR	

7. Study the problem below then create a full diagrammatical design model

as the solution to the problem.

The Problem: Your teacher asked you to write a program to prompt for user to enter One number (mark) between zero (0) and one hundred (100) then the program will output a grade depending on the mark given. .
Grades given ranges from Distinction for the highest mark to Beginner as the lowest mark.

A “**Distinction**” grade is given if mark ≥ 93

An “**Excellent**” grade is given if mark is between 77 and 92

A “**Merit**” grade is given if mark is between 58 and 76

An “**Achieve**” grade is given if mark is between 48 and 57

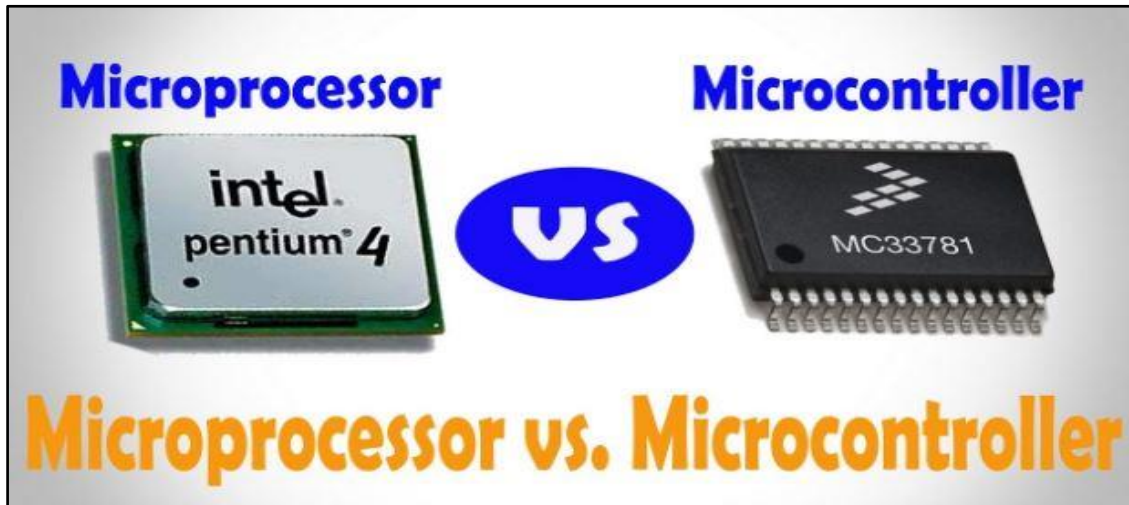
A “**Beginner**” grade is given if mark ≤ 47

The full diagrammatical design:

Skill level 4	
4	
3	
2	
1	
0	
NR	

QUESTION SIX: MICROPROCESSOR PROGRAMMING

Study the diagram below to help you answer the questions that follow.



1. Identify a common device that uses a microprocessor.

Skill level 1	
1	
0	
NR	

2. Explain the main use of programmable microprocessors (microcontroller) in real life.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION SEVEN: SAFE PRACTICES IN ICT

Prepare a presentation on Cyber-security and young children by using the diagram below and your answers to the following questions.



1. Define Cyber security.

Skill level 1	
1	
0	
NR	

2. State a feature of Internet security.

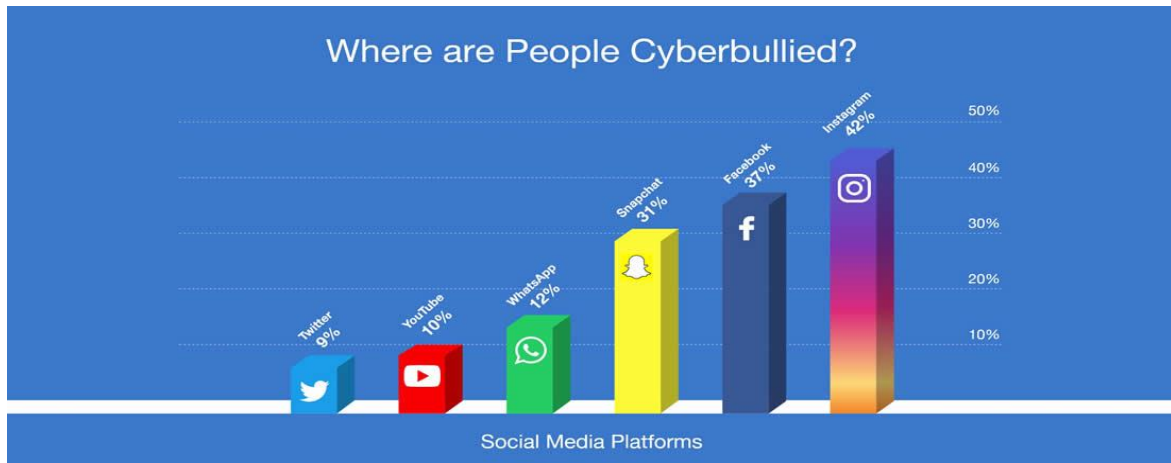
Skill level 1	
1	
0	
NR	

3. Propose an ICT safety guideline that can be used by young children when using the internet.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION EIGHT: SOCIAL ISSUES

Study the diagram below to help you answer the questions that follow.



1. Outline the growing social issues in ICT regarding cyber-bullying.

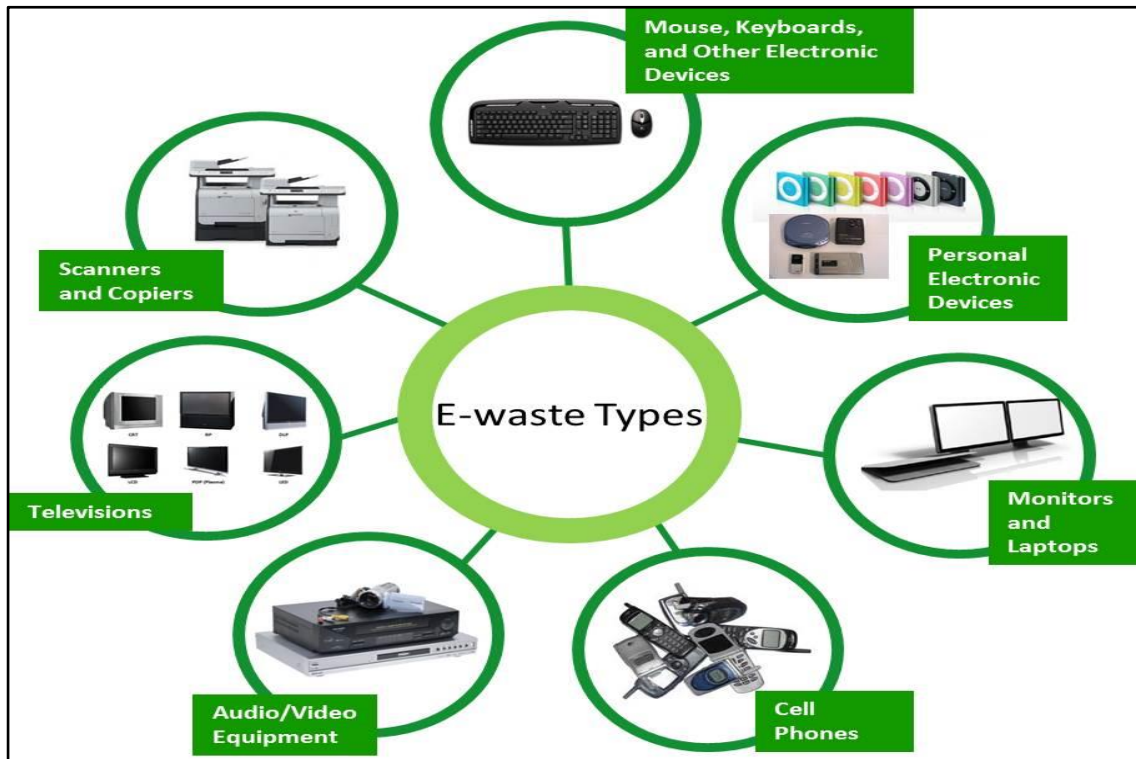
Skill level 2	
2	
1	
0	
NR	

2. Discuss the effective measures used locally and globally to minimize the impact of ethical concerns in ICT such as cyber-bullying.

Skill level 4	
4	
3	
2	
1	
0	
NR	

QUESTION NINE: ENVIRONMENTAL ISSUES

Technological advancement in ICT has continued to affect the environment in a negative way. Some of those are shown below. Use the diagram to help you answer the questions diagram that follow.



1. State a major effect of ICT on the physical environment.

Skill level 1	
1	
0	
NR	

2. State an important point to be included in a sustainable plan to address the environmental effect of ICT.

Skill level 1	
1	
0	
NR	

3. Outline effective measures being implemented locally to address the Growing environmental concerns with ICT.

Skill level 2	
2	
1	
0	
NR	

4. Explain known e-waste management practices. .

Skill level 3	
3	
2	
1	
0	
NR	

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