

MARKER CODE				



Student Enrolment Number (SEN)									

TONGA FORM SIX CERTIFICATE

2017

COMPUTING AND ICT

QUESTION AND ANSWER BOOKLET

Time allowed: 2 Hours + 10 minutes reading

INSTRUCTIONS:

1. Write your **Student Enrolment Number (SEN)** on the top right-hand corner of this page.
2. Attempt **ALL** questions. All answers are to be written on the spaces provided in this exam paper.

Sections/Topics	Total Skill Level	Time(mins)
QUESTION A: Important Trends in ICT	6	10
QUESTION B: Information Systems	8	14
QUESTION C: ICT Infrastructure	11	19
QUESTION D: Digital Designs	5	9
QUESTION E: Computer Programming	6	10
QUESTION F: Microprocessor Programming	6	10
QUESTION G: Safe Practices in ICT	10	17
QUESTION H: Social Issues	8	14
QUESTION I: Environmental Issues	10	17
TOTAL	70	120

3. Check that this booklet contains pages 2-15 in the correct order and that page 15 has been deliberately left blank.

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

QUESTION A: Important Trends in ICT

1. Within ICT there are many important trends that play important roles in society and the local economy.

a. Define ICT.

Skill level 1	
1	
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b. State an example of ICT.

Skill level 1	
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c. Identify an existing ICT trend in the area of Education here in Tonga.

Skill level 1	
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d. Explain the contribution made by existing ICT trends to our local economy.

Skill level 3	
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QUESTION B: Information Systems

1. Demonstrate your understanding of Information Systems (IS) by answering the questions that follow.

- a. Define System.

Skill level 1	
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- b. Define Information System.

Skill level 1	
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- c. Name the basic components of an IS.

Skill level 1	
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- d. Outline the role of an IS.

Skill level 2	
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e. Explain the major benefits of IS development.

[illegible]

Skill level 3	
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QUESTION C: ICT Infrastructure

1. State **ONE** (1) of the different types of data communication networks.

Skill level 1	
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2. Assess the best type of software for an agency's ICT infrastructural implementation by answering the following.

- a. Define Open Source software.

Skill level 1	
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- b. Define Proprietary software.

Skill level 1	
1	
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- c. Outline the characteristics of Open Source software.

Skill level 2	
2	
1	
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- d. Outline the characteristics of Proprietary software.

Skill level 2	
2	
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- e. Analyse the main issues concerning users in downloading and installing software from the internet.

[illegible]

Skill level 4	
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QUESTION D: Digital Designs

1. The world is now filled with digital media devices and these devices are enabling new experiences such as online radio broadcasting or web-enabled media services.

- a. State **ONE** (1) key function of an audio processing device.

Skill level 1	
1	
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- b. State **ONE** (1) of the key features of an audio processing application (software).

Skill level 1	
1	
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- c. Explain the elements of good website design.

Skill level 3	
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QUESTION E: Computer Programming

1. Data representation is an important concept to understanding computer programming.

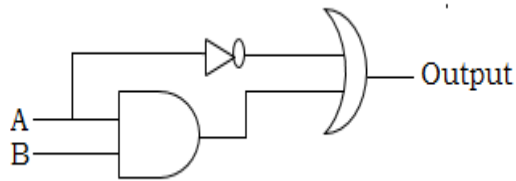
- a. Define hexadecimal.

Skill level 1	
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- b. Convert the decimal 254 to decimal and hexadecimal.

Skill level 2	
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- c. Display the truth table with the correct output for this logic circuit. Show all your work.



A	B				
1	1				
1	0				
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Skill level 3	
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QUESTION F: Microprocessor Programming

1. The world has evolved over the years to become a world dominated by microprocessors.

a. State the basic operation of a microprocessor.

Skill level 1	
1	
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b. Outline the basic function of a microprocessor.

Skill level 2	
2	
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2. Explain the main use of a programmable microprocessor in real life.

Skill level 3	
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QUESTION G: Safe Practices in ICT

1. It seems that we are relying more on computers and the Internet now. But there are growing concerns with safety and security. Demonstrate your understanding of these concerns by answering the questions that follow.



- a. Define Cyber Security.

Skill level 1	
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- b. State **ONE** (1) of the main issues with Cyber Security.

Skill level 1	
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- c. Outline the main types of ICT Security Systems.

Skill level 2	
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- d. Explain the basic Security measures to protect ICT users and their environment.

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Skill level 3	
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- e. Suggest an effective Cyber Safety Guideline to be used in ICT.

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Skill level 3	
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QUESTION H: Social Issues

1. Today we are facing many situations where we have to consider the rights and wrongs of ICT. Despite the positive contributions of ICT to our society, we must understand the social and ethical concerns presented by ICT.

- a. State a common ethical issue in ICT.

Skill level 1	
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- b. Describe the main concerns with Copyright in ICT.

Skill level 2	
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- c. Outline the growing social issues with Cyber-Bullying.

Skill level 2	
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- d. Explain the effects of unethical behaviour in ICT.

Skill level 3	
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QUESTION I: Environmental Issues

1. One of the growing concerns when we talk about ICT and the environment is the consequences of creating and disposing of ICT or digital devices.

- a. State **ONE** (1) of the negative impacts of ICT on the physical environment.

Skill level 1	
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- b. Outline effective ways to manage e-waste.

Skill level 2	
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- c. Explain effective measures being implemented locally to address the concerns with the growing use of ICT on the environment.

Skill level 3	
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- d. Analyse a sustainable plan that can be used by the country to lessen the concerns with the effect of ICT on the environment.

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Skill level 4	
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