

MARKER CODE				



STUDENT ENROLMENT NUMBER (SEN)									

TONGA SCHOOL CERTIFICATE

2021

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 **TEN QUESTIONS** and is out of 70 weighted scores.

QUESTION	STRANDS	TOTAL SKILL LEVEL
ONE	DIGITAL TECHNOLOGIES	3
TWO	COMPUTER SYSTEM	9
THREE	ONLINE RESOURCES	9
FOUR	COMPUTER APPLICATIONS	12
FIVE	DESIGN APPLICATION	7
SIX	COMPUTATIONAL THINKING AND PROGRAMMING	8
SEVEN	SAFE HANDLING OF PC	8
EIGHT	CAREERS IN ICT	5
NINE	ETHICAL ISSUES	5
TEN	ENVIRONMENTAL ISSUES	4
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 contains pages **2 - 15** in the correct order and that none of the pages is blank.

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

QUESTION ONE:**DIGITAL TECHNOLOGIES**

The introduction of personal computers (PCs) in the mid-1980s enabled newer inventions and improvement of digital technologies. Use your understanding of such improvements to answer the following questions.

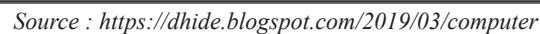
- i. Name an important invention in the early years of PCs.

Skill level 1	
1	
0	
NR	

- ii. Outline the impact of digital technologies in the development of Pacific Island countries.

Skill level 2	
2	
1	
0	
NR	

i. The diagram below demonstrates the major components of a PC. Distinguish the major components.

[illegible]

Skill level 3	
3	
2	
1	
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NR	

- Load BIOS

Skill level 2	
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iii. Discuss the technologies behind the use of a computer monitor.

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Skill level 4	
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NR	

QUESTION THREE:**ONLINE RESOURCES**

1. **Apply your knowledge on the concepts of Data Communication and the Internet to answer the following questions.**

Skill level 1	
1	
0	
NR	

- i. State an example of data communication.

- ii. Outline the main components of data communication.

Skill level 2	
2	
1	
0	
NR	

- iii. Explain the concept of internetworking.

Skill level 3	
3	
2	
1	
0	
NR	

2. *'A recent study has shown that the use of e-resources (online resources) around the world has increased significantly during the Covid – 19 pandemic.'*

Explain the main benefits of e-resources.

Skill level 3	
3	
2	
1	
0	
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QUESTION FOUR:**COMPUTER APPLICATIONS**

1. Use your understanding of the use of common applications by naming;

- i. a type of document that can be created using a word processor.

Skill level 1	
1	
0	
NR	

- ii. an appropriate type of chart for presenting trends over a period of time.

Skill level 1	
1	
0	
NR	

2. Relate your knowledge that you have gained from using some of the common applications to answer the following questions.

- i. Outline the common features used in word processing, spreadsheet or a database application

Skill level 2	
2	
1	
0	
NR	

- ii. One of the benefits of using a spreadsheet application is the use of charts. Explain some of the other benefits.

Skill level 3	
3	
2	
1	
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NR	

Skill level 2	
2	
1	
0	
NR	

QUESTION FIVE:

DESIGN APPLICATION

The Ministry of Education is seeking local media designers to design a promotion poster and a website for the 2022 School Games. Show your interest for the role by responding correctly to the following questions.

- i. Explain key graphic design concepts required for the designing of the poster.

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Skill level 3	
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- ii. Outline key design tools that can be used for the design.

Skill level 2	
2	
1	
0	
NR	

- iii. *'One of the basic concepts of web-design is the use of hyperlinks.'*

Define **hyperlinks**.

Skill level 1	
1	
0	
NR	

- iv. State a key web-design requirement for the website.

Skill level 1	
1	
0	
NR	

QUESTION SIX: COMPUTATIONAL THINKING AND PROGRAMMING

- i. Use the ASCII-binary table below to convert the word Bed to its binary value.

Letter	ASCII Code	Binary	Letter	ASCII Code	Binary
a	097	01100001	A	065	01000001
b	098	01100010	B	066	01000010
c	099	01100011	C	067	01000011
d	100	01100100	D	068	01000100
e	101	01100101	E	069	01000101
f	102	01100110	F	070	01000110

Skill level 1	
1	
0	
NR	

- ii. Convert the binary 11101000 to decimal.

Skill level 1	
1	
0	
NR	

- iii. Draw the **OR** and the **AND** gates using the space provided.

Skill level 2	
2	
1	
0	
NR	

- iv. *'We must follow the stages of programming when creating computer programs.'*

Discuss the benefits of using the major stages of programming.

This image shows a full page of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page, typical of notebook paper. There are no margins, text, or other markings on the page.

Skill level 3	
4	
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- i. Explain the effects of common safety conditions such as user-errors and bad upgrades on the coffee shop PCs.

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Skill level 3	
3	
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-

Skill level 2	
2	
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iii. Explain the main concerns regarding data security.

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Skill level 3	
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QUESTION EIGHT:**CAREERS IN ICT**

TCC is recruiting (looking for) a new web-developer and as the manager for the IT department, you have been asked to provide the correct responses to the following questions to be used for the interviews.

- i. Define **ICT professionals**

Skill level 1	
1	
0	
NR	

- ii. State a major concern facing ICT professionals here in Tonga.

Skill level 1	
1	
0	
NR	

- iii. Outline some characteristics that are expected from ICT professionals.

Skill level 2	
2	
1	
0	
NR	

- iv. State a key responsibility of a web developer.

Skill level 1	
1	
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QUESTION NINE:**ETHICAL ISSUES**

With the increasing use of ICT, legislations are being developed to address the growing ethical concerns and criminal offences relating to unacceptable use of ICT. Show that you understand the concerns by responding correctly to the following questions.

1. State the ethical issue (concern) regarding the following;

i. Piracy

Skill level 1	
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ii. Privacy

Skill level 1	
1	
0	
NR	

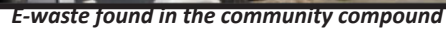
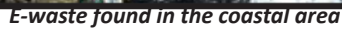
2. Outline the effects of unethical behaviour in ICT.

Skill level 2	
2	
1	
0	
NR	

3. Identify an issue faced by Tonga in trying to address ethical issues in ICT.

Skill level 1	
1	
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NR	

Your task is to develop a sustainable proposal to help PEWM in their efforts to reduce the impact of e-waste on the Local environment.



Skill level 4	
4	
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