

MARKER CODE				



STUDENT ENROLMENT NUMBER (SEN)									

TONGA NATIONAL FORM SEVEN CERTIFICATE

2021

COMPUTING AND ICT

QUESTION AND ANSWER BOOKLET

Time allowed: 2 Hours

INSTRUCTIONS:

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

QUESTION	STRANDS	TOTAL SKILL LEVEL
A	Future Trends in ICT	5
B	Information systems (IS)	9
C	ICT Infrastructure	11
D	Digital Design	11
E	Computer Programming	6
F	Microprocessor Programming	9
G	Safe Practices in ICT	6
H	Social Issues	6
I	Environmental Issues	7
TOTAL		70

3. Answer ALL QUESTIONS. Write your answers in the spaces provided in this booklet.
4. Use a **BLUE** or **BLACK** ball point pen only for writing. Use a pencil for drawing if required.
5. 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.
6. Check that this booklet contains pages **2 - 19** in the correct order and that pages 17 - 19 have been deliberately left blank.

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

a. Identify an important future ICT trend in Education.

QUESTION B:**INFORMATION SYSTEMS**

The Ministry of Education is seeking extra funding from the Cabinet for the development of Information System (IS) applications that can be used during possible closures of schools due to any COVID-19 outbreak. Present a proposal that can be used by the Ministry to convince Cabinet using your responses to the following questions.

- a. Name an appropriate IS application that can be developed for the schools.

Skill level 1	
1	
0	
NR	

- b. The development of IS applications will change the normal school workflow. Explain the relations between workflows and IS.

Skill level 3	
3	
2	
1	
0	
NR	

- c. Outline the benefits of using IS applications in Education (An outline of IS experiences in Education).

Skill level 2	
2	
1	
0	
NR	

- d. Organize some key IS development guidelines to be followed by the Ministry's IS developers.

[illegible]

Skill level 3	
3	
2	
1	
0	
NR	

- c. Name a commonly used open-source software that can be part of the installation.

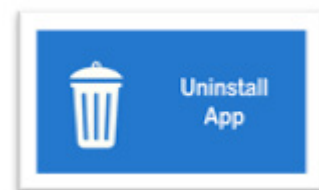
Skill level 1	
1	
0	
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- d. Compare open source and proprietary software in terms of key strengths and weaknesses.

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Skill level 3	
3	
2	
1	
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NR	

2. Most proprietary software comes with uninstalling capability. Outline the reasons for using the uninstalling feature.

[illegible]

Skill level 2	
2	
1	
0	
NR	

QUESTION D:**DIGITAL DESIGN**

1. There is a push for TCC to continue to promote the use of digital media with another Kava-idol event for Vava'u and Ha'apai. Use your responses to the following questions to provide the public with a brief understanding of the use of digital media especially for this event if it continues.

- a. Outline the digital media concept.

Skill level 2	
2	
1	
0	
NR	

- b. If TCC wants to use a microphone and an audio adapter device for the event. Outline the main functions of these key devices.

Skill level 2	
2	
1	
0	
NR	

- c. Outline key requirements for creating video files for the event.

Skill level 2	
2	
1	
0	
NR	

2. Provide some advices regarding the development of a website for a future TCC Kava-idol. The website will allow the public to register votes and view voting updates online. TCC wants you to start with your responses to the following questions.

- a. Provide a required component for creating a database-driven website for TCC.

Skill level 1	
1	
0	
NR	

- b. The use of CSS is highly recommended. Briefly discuss the benefits of using CSS in designing the TCC website for the future Kava-idol.

[illegible]

Skill level 4	
4	
3	
2	
1	
0	
NR	

QUESTION E:

COMPUTER PROGRAMMING

1. Use your understanding of Boolean Logic and the use of Logic Gates to design (sketch) a basic electrical circuit diagram based on the outcome Y of the given Truth Table with 2 digital inputs A and B. (You can start with the Logic expression)

Show your work here

A	B	Y
1	1	1
1	0	0
0	1	0
0	0	1

Skill level 3	
3	
2	
1	
0	
NR	

2. To become a member of the Tonga Young Programmers Club (TYPC), you're required to respond correctly to the following questions. Demonstrate your ability to be a member of the Club by;



- a. Stating the purpose of programming.

Skill level 1	
1	
0	
NR	

- b. Outline the key requirements for designing a computer program.

Skill level 2	
2	
1	
0	
NR	

c. Define embedded device.

d. Outline situations where dedicated microprocessors are built into manufactured devices.

e. Explain the importance of programmable microprocessors found in embedded devices.

[illegible]

Explain the impact of error-free programs that are installed in programmable microprocessors to control embedded devices.

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Skill level 3	
3	
2	
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a. Give clear outlines of some of the Cyber Security threats that are common in Tonga and around the world.

[illegible]

Skill level 2	
2	
1	
0	
NR	

b. Discuss the impacts of Cyber Security issues to Tonga and the rest of the world.

[illegible]

Skill level 4	
4	
3	
2	
1	
0	
NR	

a. A clear definition of Cyber Legislations.

Skill level 1	
1	
0	
NR	

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Skill level 2	
2	
1	
0	
NR	

- [illegible]

Skill level 3	
3	
2	
1	
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NR	

NO ELECTRICITY NO INTERNET

Increasing the distribution of electricity within a country, and therefore making electricity available to a larger proportion of the population, increases use of the Internet.









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Skill level 3	
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NR	

- [illegible]

Skill level 4	
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