

MARKER CODE				



STUDENT ENROLMENT NUMBER									

TONGA SCHOOL CERTIFICATE 2016

COMPUTING AND ICT

QUESTION AND ANSWER BOOKLET

Time Allowed: 2 Hours + 10 minutes reading

INSTRUCTIONS

1. Answer ALL questions.
2. This paper consists of **10 QUESTIONS** and is out of **70 SKILL LEVEL**.

Question	Topics	Total Skill Level
A	PCs and Digital Technologies	7
B	Computer systems	11
C	Online Resources	7
D	PC Applications	5
E	Design Applications	4
F	Computational Thinking and Programming	9
G	Safe Handling of PCs	6
H	Careers in ICT	8
I	Ethical Issues	7
J	Environmental Issues	6
	TOTAL	70

3. Write your **Student Enrolment Number** on the right hand corner.
4. Answer **ALL** questions in the space provide in this booklet
5. If you need more space for any answer, ask the supervisor for extra paper.
6. Check that your paper consists of **19** pages and that none of the page is blank.

YOU MUST HAND THIS BOOKLET TO THE SUPERVISOR AT THE END OF THE EXAMINATION.

QUESTION A: PCs and Digital Technologies

Today, we use Personal Computers (PCs) and the Internet to perform a wide range of functions at school and the work places. All possible because of the invention of PCs in the 1970s.

Use your understanding of the early days of PCs and the Internet to answer the questions that follow.

- a. Identify **ONE** (1) of the known past inventions in the development of PCs.

	Skill level 1	
	1	
	0	
	NR	

- b. Identify **ONE** (1) of the key inventions in the early years of the Internet.

	Skill level 1	
	1	
	0	
	NR	

- c. Outline the importance of the early inventions mentioned above in the development of the Internet.

	Skill level 2	
	2	
	1	
	0	
	NR	

- d. Assess and report the impact of past technological (Computing) inventions in the work places.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION B: Computer Systems

1. Computers come in different types and sizes. Show your understanding of computer systems by answering the questions that follow.



- a. Identify **ONE** (1) of the main categories (types) of computers.

Skill level 1	
1	
0	
NR	

- b. Name **ONE** (1) of the major internal PC hardware components.

Skill level 1	
1	
0	
NR	

- c. Name **ONE** (1) of the optional peripheral components of a PC.

Skill level 1	
1	
0	
NR	

- d. List **TWO** (2) common PC output devices.

Skill level 1	
1	
0	
NR	

- e. Outline the major functions of a CPU.

Skill level 2	
2	
1	
0	
NR	

- f. Outline the major functions of a MOTHERBOARD.

Skill level 2	
2	
1	
0	
NR	

- g. Explain the main use of the different categories (types) of computers.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION C: Online Resources

1. Many students are using the Internet for research or to access electronic resources that can help them with their studies. Identify ONE of the different types of online resources.

	Skill level 1	
	1	
	0	
	NR	

2. Data transmission is a basic computer network concept. Explain the different types of transmission mode.

	Skill level 3	
	3	
	2	
	1	
	0	
	NR	

3. Explain the different categories (types) of computer network.

	Skill level 3	
	3	
	2	
	1	
	0	
	NR	

QUESTION D: PC Applications

1. Having a good understanding of common PC applications (software) is now very important for finding employment (finding work or job). Answer the following questions to prepare you for a job interview.

- a. Name a type of document that you can create using a word processor.

Skill level 1	
1	
0	
NR	

- b. Name an appropriate (suitable) task for a spreadsheet application.

Skill level 1	
1	
0	
NR	

- c. Explain key Database or Database Management System (DBMS) concepts.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION E: Design Applications

1. A clear and specific list of design requirements, also a good understanding of design concepts are very important in designing graphics or webpages (website).

- a. Name **ONE** (1) specific graphic design requirement.

Skill level 1	
1	
0	
NR	

- b. Name **ONE** specific web-design requirement.

Skill level 1	
1	
0	
NR	

- b. Describe ONE of the key web-design concepts.

Skill level 2	
2	
1	
0	
NR	

QUESTION F: Computational thinking and Programming

1. Use your understanding of computational thinking and programming to answer the questions that follow.

- a. Outline the flow diagram process.

Skill level 2	
2	
1	
0	
NR	

- b. Define algorithm.

Skill level 1	
1	
0	
NR	

- c. Name **ONE** (1) of the common programming languages.

Skill level 1	
1	
0	
NR	

2. Perform the following binary operations.

i. $11001 + 10010$ ii. $1011 - 1001$

Skill level 2	
2	
1	
0	
NR	

3. Convert the following decimal numbers to binary numbers.

i. 35 ii. 110

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION G: Safe Handling of PCs

1. There are important safety and security issues in ICT especially the Internet that we need to know. Demonstrate your understanding of the issues relating to ICT safety and security by answering the following questions.



- a. Identify **ONE** (1) of the common safety issues affecting data networks.

Skill level 1	
1	
0	
NR	

- b. Define data security.

Skill level 1	
1	
0	
NR	

- c. Outline the main issues affecting the health of computers.

Skill level 2	
2	
1	
0	
NR	

- d. Describe key safety or security issues affecting Internet Users.

Skill level 2	
2	
1	
0	
NR	

QUESTION H: Careers in ICT

1. Careers in the ICT field are in high demand and the industry is growing so fast. It is important to know the expectations and roles of ICT professionals by answering the questions that follow.

- a. Define ICT professionals.

Skill level 1	
1	
0	
NR	

- b. Outline the main responsibilities of a computer programmer.

Skill level 2	
2	
1	
0	
NR	

- c. Outline the main responsibilities of an ICT project manager.

Skill level 2	
2	
1	
0	
NR	

- d. Explain the major expectations from ICT professionals.

Skill level 3	
3	
2	
1	
0	
NR	

QUESTION I: Ethical Issues

1. ICT has raised new ethical (acceptable behavior) concerns about the protection of personal privacy, protection of intellectual property, user responsibility, acceptable access, use of information, software licenses and piracy.

- a. State an ethical concern regarding Piracy in ICT.

Skill level 1	
1	
0	
NR	

- b. State an ethical concern regarding Privacy in ICT.

Skill level 1	
1	
0	
NR	

- c. State an ethical concern with Copyright in ICT.

Skill level 1	
1	
0	
NR	

- d. Discuss effective measures that can be used to address (minimize) ethical concerns in ICT.

Skill level 4	
4	
3	
2	
1	
0	
NR	

QUESTION J: Environmental Issues

1. ICT has helped us in many ways by improving the way we live and work. Unfortunately, the growing use of ICT is causing problems on the environment.
- a. Identify **ONE** (1) of the main environmental concerns with the increasing use of ICT.

Skill level 1	
1	
0	
NR	

- b. Outline the main impact of ICT on the environment.

Skill level 2	
2	
1	
0	
NR	

- c. Explain the common measures that can help reduce the impact of ICT on the environment.

Skill level 3	
3	
2	
1	
0	
NR	