MARKER CODE





**Student Personal Identification Number** 

# South Pacific Form Seven Certificate INFORMATION AND COMMUNICATIONS TECHNOLOGY 2021

## **QUESTION and ANSWER BOOKLET**

Time allowed: Three hours

(An extra 10 minutes is allowed for reading this paper)

### INSTRUCTIONS

Write your **Student Personal Identification Number (SPIN)** in the space provided on the top right-hand corner of this page.

Answer ALL QUESTIONS. Write your answers in the spaces provided in this booklet.

If you need more space for answers, ask the Supervisor for extra paper. Write your SPIN on all extra sheets used and clearly number the questions. Attach the extra sheets at the appropriate places in this booklet.

	Skill Level & Number of Questions			tions	
Major Learning Outcomes (Achievement Standards)	Level 1 Uni- structural	Level 2 Multi- structural	Level 3 Relational	Level 4 Extended Abstract	Weight/ Time
<b>Strand 1: Digital Media</b> Understand the differences between Open Source and Proprietary software and be able to use digital media concepts in ICT to design and develop a media product.	4	2	-	1	12% 36 min
Strand 2: Website Development Understand the key concepts of web development and the use of web-driven databases.	2	1	2	-	10% 30 min
Strand 3: Programming Understand programming concepts through the use of appropriate programming languages.	5	2	1	-	12% 36 min
Strand 4: Microprocessor Control Understand the principles of microprocessor control and the use of programmable microprocessors to control embedded devices.	2	2	-	-	6% 18 min
<b>Strand 5: Issues in ICT</b> Understand the major concerns with the use of ICT and the important measures that can be used to minimise the concerns or provide some level of safety and security.	5	1	3	1	20% 60 min
TOTAL	18	8	6	2	60% 180 min

Check that this booklet contains pages 2–13 in the correct order and that none of these pages are blank.

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

## STRAND 1: DIGITAL MEDIA

		Assessor's	s use only
	Use the information below to answer questions 1.1–1. 7.		
	You have been asked to prepare a media design proposal that can be used by the organising committee for the <b>2021 Pasifika Festival</b> to be held in Suva.		
1.1	You propose to use Open-Source Software.		
	Provide a brief definition of <b>open-source software</b> .		
		Unistr	uctural
		1	
1.2	Present to the organising committee a clear outline of the <b>strengths of open-source software</b> .		
		Multist	ructural
		2	
		1	
		0	
		NR	
1.3	Specify <b>one</b> task that may require the use of <b>graphics design software</b> for promoting the 2021 Pasifika Festival		
		Unistr	uctural
		1	
		0	
		NR	
1.4	Discuss the importance of determining the full requirements for any specific graphics design task that is needed by the organising committee.		

Assessor's use only

		Exter Abst	nded
		4	
		3	
		2	
		1	
		0	
		NR	
1.5	The organising committee wants to capture the festival on video.		
	Name an <b>appropriate video peripheral</b> that can be used during the festival.	Unistru	ictural
		1	
		0	
		NR	
1.6	State the <b>main function</b> of the video peripheral named in question 1.5 above.	Unistru	ictural
		1	
		NR	
1.7	Present an outline of the <b>common features</b> of a video processing software that you propose to use for the 2021 Pasifika Festival.		
		Multistructural	
		2	
		1	
		0	
		NR	

## STRAND 2: WEBSITE DEVELOPMENT

		Assessor's	use only
	Use the information below to answer questions 2.1–2.5.		
	You have been shortlisted for an interview with the Bank South Pacific (BSP). Demonstrate to BSP that you can help in the development of their new website by answering the web development questions below. This new website is to replace the current Automated Teller Machine (ATM) online system.		
2.1	Identify a key <b>web-design requirement</b> that you may need for designing the BSP bank website.		
		Unistru	lctural
		0	
		NR	
2.2	A BSP management staff suggested the use of CSS in the development of the website.		
	Provide a brief definition of <b>CSS</b> .	Unistr	uctural
		1	
		0	
		NR	
2.3	The current ATM online system is a database-driven website.		
	Explain the database-driven website concept.		
		Relat	ional
		3	
		2	
		NR	
			<u> </u>

#### Assessor's use only

2.4	Explain the key benefits of using a database-driven website for the BSP bank.		
		Relat	ional
		3	
		2	
		1	
		0	
2.5	Outline the required process that can be used in testing BSP's web-driven database website.		
		Multistr	uctural
		2	
		1	
		0	
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## STRAND 3: PROGRAMMING

		Assessor's use only
	Use the information below to answer questions 3.1–3.5.	
	You have been asked to prepare a basic lesson on computer programming for a group of Form Five (Year 11) students by using your responses to the following programming concepts.	
3.1	Start the lesson by stating <b>one</b> of the main benefits of using the <b>problem</b> - solving process in programming.	Unistructural 1 0 NR
3.2	The next part of the lesson is your preferred design approach, which is the <b>bottom-up design</b> approach.	
	i. Provide a <b>definition</b> of the bottom-up design approach.	Unistructural 1 0 NR
	ii. State the <b>main benefit</b> of the bottom-up design approach.	Unistructural 1 0 NR
3.3	The next part of the lesson is the use of <b>design tools in programming</b> , such as algorithms and flowcharts.	
	i. Define <b>algorithm</b> in computer programming.	Unistructural 1 0 NR
	ii. Outline <b>two</b> known advantages of using flowcharts.	Multistructural       2       1       0       NR

#### Assessor's use only

	iii.	Outline <b>two</b> benefits of using appropriate design tools, such as the Unified Modelling Language (UML), for designing computer programmes.		
			Multi	structural
			2	
			1	
			0	
			NR	
3.4	The next	part of the lesson is about the programming stages.		
	Explain th	ne benefits of following the programming stages.		
			Rela	ational
			3	
			2	
			1	
			0	
			NR	
3.5	The final	part of the lesson is the debugging stage.		
	Define <b>de</b>	ebugging in programming.	Unist	ructural
			1	
			0	
			NR	

## STRAND 4: MICROPROCESSOR CONTROL

r	1	Assessor'	s use only
	Use the information below to answer questions 4.1–4.4.		
	Programmable microprocessors are used to control almost every electronic or embedded device today. You have been short-listed for a position at INTEL, a company that develops different types of microprocessors. You can prepare for your job interview by answering the following questions.		
4.1	State a <b>key feature</b> of a microprocessor.	Unistru	ıctural
		1	
		0	
		NR	
4.2	State a <b>simple task</b> that can be performed by an embedded device that is controlled by a programmable microprocessor.	Unistru	uctural
		1	
		NR	
	· · · · · · · · · · · · · · · · · · ·		
4.3	Outline the main parts of the <b>process involved</b> when a microprocessor controls the hardware to perform a simple task.		
		Multist	ructural
		2	
		1	
		0	
		NR	
4.4	Outline the <b>process involved</b> in controlling an embedded device to respond when a critical change in its environment occurs.		
		Multist	ructural
		2	
		1	
		0	
		NR	

## STRAND 5: ISSUES IN ICT

		Assessor's	s use only
	Use the information below to answer questions 5.1 and 5.2.		
	"With ICT in our everyday use, it can help our society to get better and help our country to a better change. But there are some contemporary (present-day) issues in ICT such as cyberbullying, copyright infringement, green technology, and internet addiction, which we need to take action immediately." <u>Source: https://www.change.org/p/contemporary-issues-in-ict</u>		
5.1	Define the following ICT issues:		
	i. <b>Piracy</b>	Unistru	ictural
		1	
		0	
		NR	
	ii. Privacy	Unistru	ictural
		1	
		0	
		NR	
5.2	Outline the <b>impacts</b> of ethical issues in ICT.		
		Multistr	uctural
		2	
		1	
		0	
		NR	

-		Tissessor suse only
	Use the information below to answer questions 5.3–5.5.	
	In addition to the ethical concerns, there are known issues regarding ICT and our physical environment and human health. Present your understanding of the issues and possible actions by answering the questions below.	
5.3	Discuss effective ways of <b>managing ICT waste</b> .	
		Freedood
		Abstract 4
		3
		1
		NR

		Assessor's use only
5.4	State a known health issue directly related to using ICT equipment.	Unistructural
		_   1
		0
		NR
5.5	Explain the best <b>operating practices</b> when interacting with ICT.	
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	Use the information below to answer questions 5.6–5.9.		
	With the unbelievable rise in the use of ICT, security threats (fears) and cybercrimes are on the rise, causing companies and nations of the Pacific to consider serious security actions.		
	Present your understanding of the security threats and appropriate actions taken to address the issue by answering the questions below.		
5.6	State a known <b>security threat</b> posed by employees.	Unistru	uctural
		1	
		0	
		NR	
5.7	Explain the <b>issues</b> of having an online identity when using social media such as Facebook.		
		Delet	ional
		Relat	
		2	
		1	
		0	
		NR	

5.8	State an example of an <b>ICT security incident</b> that has been reported in the Pacific.		
		Unistructural	
		1	
		0	
		NR	
5.9	Explain known efforts being implemented in the Pacific to combat cybercrimes.		
		Relat	ional
		3	
		2	
		1	
		0	
		NR	

THE END

Assessor's use only