

MARKER CODE



Pacific  
Community  
Communauté  
du Pacifique



Student Personal Identification Number

# South Pacific Form Seven Certificate

## INFORMATION AND COMMUNICATIONS TECHNOLOGY

### 2017

### 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.

Major Learning Outcomes (Achievement Standards)	Skill Level & Number of Questions				Weight/ Time
	Level 1 <i>Uni- structural</i>	Level 2 <i>Multi- structural</i>	Level 3 <i>Relational</i>	Level 4 <i>Extended Abstract</i>	
<b>Strand 1: Open Source and Proprietary Software</b> Differentiate between Open Source and Proprietary software, design and develop a product in two or more of the three defined areas of media by using available ICT tools	4	1	1	-	9% 27 min
<b>Strand 2: Ethics of ICT, Environmental Issues, Climate Change, Safe Practices</b> Discuss concepts relating to ICT: piracy, security, copyright, longevity of electronic information storage, and intellectual property, environmental problems generated by the technology; Employ established best practices when interacting with technology.	1	1	4	-	15% 45 min
<b>Strand 3: Programming</b> Demonstrate understanding of programming through the use of appropriate programme languages	3	1	1	1	12% 36 min
<b>Strand 4: Website Design and Development</b> Demonstrate understanding of internet connectivity by designing, developing and testing a website which incorporates data from a purpose built database.	1	4	1	-	12% 36 min
<b>Strand 5: Microprocessor Control</b> Show understanding of the principles of control by programming a microprocessor to sense, measure, record and respond to a parameter of the physical environment	5	-	1	1	12% 36
<b>TOTAL</b>	<b>14</b>	<b>7</b>	<b>8</b>	<b>2</b>	<b>60% 180 min</b>

Check that this booklet contains pages 2-14 in the correct order and that none of these pages is blank.

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

**STRAND 1: OPEN SOURCE AND PROPRIETARY SOFTWARE***Assessor's use only*

1.1	<p>Mr. Tomasi installed open source software in his computer. Describe <b>two</b> strengths of the open source model of software.</p> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #cccccc;"> <th colspan="2" style="padding: 2px;">Multistructural</th> </tr> </thead> <tbody> <tr> <td style="width: 30px; text-align: center; padding: 2px;">2</td> <td style="width: 60px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">1</td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">0</td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">NR</td> <td></td> </tr> </tbody> </table>	Multistructural		2		1		0		NR							
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1.2	<p>Tick <b>one</b> open source software that he could use.</p> <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse; width: 80%;"> <tbody> <tr> <td style="padding: 5px;">Microsoft Office</td> <td style="width: 60px;"></td> </tr> <tr> <td style="padding: 5px;">Open Office</td> <td></td> </tr> <tr> <td style="padding: 5px;">Mozilla Firefox</td> <td></td> </tr> <tr> <td style="padding: 5px;">Windows OS</td> <td></td> </tr> </tbody> </table>	Microsoft Office		Open Office		Mozilla Firefox		Windows OS		<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #cccccc;"> <th colspan="2" style="padding: 2px;">Unistructural</th> </tr> </thead> <tbody> <tr> <td style="width: 30px; text-align: center; padding: 2px;">1</td> <td style="width: 60px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">0</td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR	
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1.3	<p>Explain the steps he might carry out to install the open source software.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr style="background-color: #cccccc;"> <th colspan="2" style="padding: 2px;">Relational</th> </tr> </thead> <tbody> <tr> <td style="width: 30px; text-align: center; padding: 2px;">3</td> <td style="width: 60px;"></td> </tr> <tr> <td style="text-align: center; padding: 2px;">2</td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">1</td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">0</td> <td></td> </tr> <tr> <td style="text-align: center; padding: 2px;">NR</td> <td></td> </tr> </tbody> </table>	Relational		3		2		1		0		NR					
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1.4a	<p>The table below shows different standard file formats that are used to transmit media files on the internet.</p> <p>Tick <b>one</b> box in each row to show whether the format is used to transmit an image, a sound file or a video file.</p> <table border="1"> <thead> <tr> <th></th> <th></th> <th>Image file</th> <th>Sound file</th> <th>Video file</th> </tr> </thead> <tbody> <tr> <td></td> <td>AVI</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>BMP</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>MP3</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Image file	Sound file	Video file		AVI					BMP					MP3				<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR	
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1.4b	<p>Define <b>animated object</b>.</p> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR																					
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1.5	<p>Identify at least <b>one</b> audio peripheral.</p> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR																					
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**STRAND 2: ETHICS OF ICT, ENVIRONMENTAL ISSUES, CLIMATE CHANGE, SAFE PRACTICES**

*Assessor's use only*

2.1	Define the term <b>piracy</b> . <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR					
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2.2	Describe <b>two</b> threats posed by computer criminals such as hackers and crackers. <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Multistructural</th> </tr> </thead> <tbody> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Multistructural		2		1		0		NR			
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2.3	Explain the effects of privacy on access. <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Relational</th> </tr> </thead> <tbody> <tr> <td>3</td> <td></td> </tr> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Relational		3		2		1		0		NR	
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2.4 Explain the impacts of health issues that are directly related to using Information and Communications Technology (ICT) equipment.

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2.5 Climate change is a growing concern for many people around the world. Explain the connection between climate change and ICT and how this is impacted by E-waste.

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2.6 Explain the challenges that ICT has created for owners of Intellectual Property.

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**STRAND 3: PROGRAMMING**

*Assessor’s use only*

3.1a	<p><b>Use the information below to answer Question 3.1a</b></p> <p>John is writing a program to calculate the wages of workers in a Garment Factory. John uses an Integrated Development Environment (IDE) to create the program.</p> <p>Explain the tools used in an IDE that can help John when creating the program.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr style="background-color: #cccccc;"> <th colspan="2">Relational</th> </tr> <tr><td style="width: 20px;">3</td><td style="width: 20px;"></td></tr> <tr><td>2</td><td></td></tr> <tr><td>1</td><td></td></tr> <tr><td>0</td><td></td></tr> <tr><td>NR</td><td></td></tr> </table>	Relational		3		2		1		0		NR	
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3.1b	<p><b>Use the information below to answer Question 3.1b</b></p> <p>Workers sometimes get a \$50 bonus.</p> <p>Here is the algorithm used to calculate whether a worker should get a bonus.</p> <pre style="margin-left: 40px;"> Limit = 200 INPUT Wages Earned IF Wages Earned &lt; Limit THEN     Pay = Wages Earned ELSE     Pay = Wages Earned + 50 END IF                     </pre> <p>State the value of Pay after this code is executed for each of the following values of Wages Earned.</p> <p style="margin-left: 40px;">Wages Earned = 50          Pay = .....</p> <p style="margin-left: 40px;">Wages Earned = 200        Pay = .....</p>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr style="background-color: #cccccc;"> <th colspan="2">Unistructural</th> </tr> <tr><td style="width: 20px;">1</td><td style="width: 20px;"></td></tr> <tr><td>0</td><td></td></tr> <tr><td>NR</td><td></td></tr> </table>	Unistructural		1		0		NR					
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3.2a	<p><b>Use the information below to answer Question 3.2a</b></p> <p>A game developer is developing an online game that can be played on game consoles, desktop computers or mobile phones.</p> <p>The program is written in high-level code and then translated to machine code.</p> <p>State <b>one</b> difference between high – level code and machine code.</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR			
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3.2b	<p>One type of translator which can be used is an interpreter.</p> <p>Describe how an interpreter translates the high – level code to machine code.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Multistructural</th> </tr> </thead> <tbody> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Multistructural		2		1		0		NR	
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3.3	<p>Define <b>debugging</b>.</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR			
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**STRAND 4: WEBSITE DESIGN AND DEVELOPMENT***Assessor's use only*

4.1	<p>As part of the Ministry of Education's reform, a web designer was hired to develop the website for the Ministry (<a href="http://www.education.gov.fj">www.education.gov.fj</a>).</p> <p>Define the term <b>website</b>.</p> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR			
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4.2	<p>Describe how to create a database to be used in conjunction with the website.</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Multistructural</th> </tr> </thead> <tbody> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Multistructural		2		1		0		NR	
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4.3	<p>List <b>four</b> elements of good graphic design.</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Multistructural</th> </tr> </thead> <tbody> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Multistructural		2		1		0		NR	
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4.4	<p>Describe how to use a text editor to write the code for one CSS file which controls the design of the website.</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Multistructural</th> </tr> </thead> <tbody> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Multistructural		2		1		0		NR	
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<p>4.5</p>	<p>Outline <b>four</b> principles of good website design.</p> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <tr> <th colspan="2">Multistructural</th> </tr> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </table>	Multistructural		2		1		0		NR			
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<p>4.6</p>	<p>Explain the interaction processes between a website and its purpose built database.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <tr> <th colspan="2">Relational</th> </tr> <tr> <td>3</td> <td></td> </tr> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </table>	Relational		3		2		1		0		NR	
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**STRAND 5: MICROPROCESSOR CONTROL**

*Assessor's use only*

<p>5.1</p>	<p>Here are some statements about the CPU of a computer.</p> <p>Tick the boxes in rows ii) and iii) to show that these statements about the CPU are either true or false.</p> <table border="1"> <thead> <tr> <th></th> <th>Statement</th> <th>True</th> <th>False</th> </tr> </thead> <tbody> <tr> <td>i)</td> <td>CPU stands for Central Processing Unit</td> <td style="text-align: center;">✓</td> <td></td> </tr> <tr> <td>ii)</td> <td>The CPU fetches and decodes instructions</td> <td></td> <td></td> </tr> <tr> <td>iii)</td> <td>If a CPU has many cores, this slows down the computer</td> <td></td> <td></td> </tr> <tr> <td>iv)</td> <td>The hard disk drive is part of the CPU</td> <td></td> <td style="text-align: center;">✓</td> </tr> </tbody> </table>		Statement	True	False	i)	CPU stands for Central Processing Unit	✓		ii)	The CPU fetches and decodes instructions			iii)	If a CPU has many cores, this slows down the computer			iv)	The hard disk drive is part of the CPU		✓	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td></td> </tr> <tr> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td style="text-align: center;">NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR	
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<p>5.2a</p>	<p><b>Use the information below to answer Questions 5.2a – 5.2b</b></p> <div style="display: flex; align-items: flex-start;">  <div> <p><b>HP - 17.3" Laptop - Intel Core i5 - 8GB Memory - 1TB Hard Drive - HP finish in jet black</b></p> <p>Model: 17-BS011DX   SKU: 5884809</p> <ul style="list-style-type: none"> <li>Windows 10 Home</li> <li>Technical details: 7th Gen Intel® Core™ i5-7200U processor; 17.3" display; 8GB memory; 1TB hard drive</li> <li>Special features: Bluetooth; HDMI output</li> </ul> </div> </div> <p>Name the processor of this computer system.</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td></td> </tr> <tr> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td style="text-align: center;">NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR																					
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<p>5.2b</p>	<p>What is the capacity of the RAM?</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td></td> </tr> <tr> <td style="text-align: center;">0</td> <td></td> </tr> <tr> <td style="text-align: center;">NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR																					
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5.3	<p>Name <b>one</b> programming language.</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR					
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5.4	<p>Identify <b>one</b> feature of a machine code.</p> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Unistructural</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Unistructural		1		0		NR					
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5.5	<p>Explain how an embedded microprocessor can detect a change in its environment.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>	<table border="1"> <thead> <tr> <th colspan="2">Relational</th> </tr> </thead> <tbody> <tr> <td>3</td> <td></td> </tr> <tr> <td>2</td> <td></td> </tr> <tr> <td>1</td> <td></td> </tr> <tr> <td>0</td> <td></td> </tr> <tr> <td>NR</td> <td></td> </tr> </tbody> </table>	Relational		3		2		1		0		NR	
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5.6 Discuss why it is important that the software that drives the embedded microprocessor is error free.

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<b>Extended Abstract</b>	
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**THE END**