

MARKER CODE



Student Personal Identification Number

# South Pacific Form Seven Certificate

## INFORMATION AND COMMUNICATIONS TECHNOLOGY

### 2019

### 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<br>(Achievement Standards)   | Skill Level & Number of Questions     |   |                              |   | Weight/<br>Time        |
|--|---------------------------------------|---|------------------------------|---|------------------------|
|  | Level 1<br><i>Uni-<br/>structural</i> | Level 2<br><i>Multi-<br/>structural</i> | Level 3<br><i>Relational</i> | Level 4<br><i>Extended<br/>Abstract</i> |                        |
| <b>Strand 1: Open Source and Proprietary Software</b><br>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.   | 2                                     | 2                                       | 1                            | -                                       | 9%<br>27 min           |
| <b>Strand 2: Ethics of ICT, Environmental Issues, Climate Change, and Safe Practices</b><br>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. | 3                                     | 1                                       | 2                            | 1                                       | 15%<br>45 min          |
| <b>Strand 3: Programming</b><br>Demonstrate understanding of programming through the use of appropriate programme languages.   | 4                                     | 1                                       | 2                            | -                                       | 12%<br>36 min          |
| <b>Strand 4: Website Design and Development</b><br>Demonstrate understanding of internet connectivity by designing, developing and testing a website that incorporates data from a purpose built database.   | 3                                     | 1                                       | 1                            | 1                                       | 12%<br>36 min          |
| <b>Strand 5: Microprocessor Control</b><br>Show understanding of the principles of control by programming a microprocessor to sense, measure, record and respond to a parameter of the physical environment.   | 2                                     | 2                                       | 2                            | -                                       | 12%<br>36 min          |
| <b>TOTAL</b>   | <b>14</b>                             | <b>7</b>                                | <b>8</b>                     | <b>2</b>                                | <b>60%<br/>180 min</b> |

Check that this booklet contains pages 2-12 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: OPEN SOURCE AND PROPRIETARY SOFTWARE***Assessor's use only*

| 1.1             | <p><b>Circle the letter that BEST represents your answer.</b></p> <p>A method in which pictures are manipulated to appear as moving images is</p> <p>A. drawing.<br/>B. creativity.<br/>C. animation.<br/>D. photography.</p> | <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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| 1.2             | <p>State <b>one</b> example of video editing software.</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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| 1.3             | <p>Describe <b>one</b> feature of a graphics card.</p> <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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| 1.4             | <p>List <b>two</b> advantages of the open source model of software development.</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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| 1.5             | <p>Explain how free trial versions of proprietary software assist a customer to make decisions about purchase.</p> <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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**STRAND 2: ETHICS OF ICT, ENVIRONMENTAL ISSUES, CLIMATE CHANGE, AND SAFE PRACTICES**

*Assessor's use only*

| 2.1             | Define the term <b>piracy</b> .<br><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             | State <b>one</b> type of computer security.<br><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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| 2.3             | Describe a threat posed by computer criminals including hackers.<br><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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| 2.4             | Define <b>intellectual property</b> .<br><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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| 2.5             | Explain the importance of computer ethics in relation to copyright laws.<br><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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**STRAND 3: PROGRAMMING***Assessor's use only*

| 3.1          | <p><b>Circle the letter that BEST represents your answer.</b></p> <p>The process of finding errors and fixing them within a programme is called</p> <p>A. scanning.<br/>B. skimming.<br/>C. debugging.<br/>D. assembling.</p>  | <table border="1"> <thead> <tr> <th colspan="2">Unstructural</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> | Unstructural |  | 1 |  | 0 |  | NR |  |
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| 3.2          | <p><b>Define computer programme.</b></p> <hr/> <hr/> <hr/>   | <table border="1"> <thead> <tr> <th colspan="2">Unstructural</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> | Unstructural |  | 1 |  | 0 |  | NR |  |
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| 3.3          | <p><b>Study the programme given below to answer questions 3.3 and 3.4.</b></p> <pre>#include &lt;iostream&gt; using namespace std; int main() {     int firstNumber, secondNumber, sumOfTwoNumbers;     cout &lt;&lt; "Enter two integers: ";     cin &gt;&gt; firstNumber &gt;&gt; secondNumber;     sumOfTwoNumbers = firstNumber + secondNumber;     cout &lt;&lt; firstNumber &lt;&lt; " + " &lt;&lt; secondNumber &lt;&lt; " = " &lt;&lt; sumOfTwoNumbers;      return 0; }</pre> <p>State <b>one</b> variable used in the programme.</p> <hr/> | <table border="1"> <thead> <tr> <th colspan="2">Unstructural</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> | Unstructural |  | 1 |  | 0 |  | NR |  |
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*Assessor's use only*

| 3.4             | <p>State the output of the programme if integers 7 and 8 are entered.</p> <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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| 3.5             | <p><b>Study the programming problem given below to answer questions 3.5 and 3.6.</b></p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p>The cost of international call from Fiji to Tuvalu is as follows:</p> <ul style="list-style-type: none"> <li>• Connection fee \$0.65;</li> <li>• \$1.50 for the first five minutes; and</li> <li>• \$0.45 for each additional minute.</li> </ul> </div> <p>Write a simple pseudocode for the above programming problem to calculate the total cost for an international call.</p> <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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| 3.6             | <p>Using the pseudocode in 3.5 above, draw a flowchart to calculate the total cost for the call.</p> <div style="border: 1px solid black; height: 300px; width: 100%; margin-top: 10px;"></div>   | <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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## STRAND 4: WEBSITE DESIGN AND DEVELOPMENT

*Assessor's use only*

| 4.1             | <p>Circle the letter that <b>BEST</b> represents your answer.</p> <p>Use the URL given below to answer questions 4.1 and 4.2.</p> <div style="border: 1px solid black; padding: 10px; text-align: center; margin: 10px auto; width: fit-content;"> <p><b>http://www.youtube.com</b></p> </div> <p>Which of the following is the <b>protocol</b> in the above URL?</p> <p>A. http<br/>B. www<br/>C. youtube<br/>D. .com</p> | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #cccccc;">Unistructural</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="width: 40px;"></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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| 4.2             | <p>Circle the letter that <b>BEST</b> represents your answer.</p> <p>Which of the following is the <b>sub domain</b> in the above URL?</p> <p>A. http<br/>B. www<br/>C. youtube<br/>D. .com</p>  | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #cccccc;">Unistructural</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="width: 40px;"></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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| 4.3             | <p>Define the term <b>website</b>.</p> <hr/> <hr/> <hr/> <hr/>   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #cccccc;">Unistructural</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1</td> <td style="width: 40px;"></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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| 4.4             | <p>Outline <b>two</b> principles of good website design.</p> <hr/> <hr/> <hr/> <hr/> <hr/> <hr/>   | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="2" style="background-color: #cccccc;">Multistructural</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2</td> <td style="width: 40px;"></td> </tr> <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> | Multistructural |  | 2 |  | 1 |  | 0  |  | NR |  |
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| 1               |  |  |                 |  |   |  |   |  |    |  |    |  |
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| NR              |  |  |                 |  |   |  |   |  |    |  |    |  |





- 4.6 Use CSS to design the webpage given in the resource below. The background should be yellow. The font should be blue, italic and 80px.



```
<!DOCTYPE html>
<html>
<head>
<_____>
_____ {
_____: yellow;
}
_____ {
_____: blue;
_____: italic;
font-size: 80px;
text-align: center;
}
</style>
</_____>
<body>
<h1>_____</h1>
</body>
</html>
```

| Extended Abstract |  |
|-------------------|--|
| 4                 |  |
| 3                 |  |
| 2                 |  |
| 1                 |  |
| 0                 |  |
| NR                |  |

**STRAND 5: MICROPROCESSOR CONTROL**

*Assessor's use only*

| <p>5.1</p>      | <p><b>Circle the letter that BEST represents your answer.</b></p> <p>A computer language that is written in binary codes is</p> <p>A. natural language.<br/>                     B. machine language.<br/>                     C. assembly language.<br/>                     D. high level language.</p> | <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 |  |    |  |
|-----------------|---|--|-----------------|--|---|--|---|--|----|--|----|--|
| Unistructural   |   |  |                 |  |   |  |   |  |    |  |    |  |
| 1               |   |  |                 |  |   |  |   |  |    |  |    |  |
| 0               |   |  |                 |  |   |  |   |  |    |  |    |  |
| NR              |   |  |                 |  |   |  |   |  |    |  |    |  |
| <p>5.2</p>      | <p><b>Define a <i>microprocessor</i>.</b></p> <hr/> <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 |  |    |  |
| Unistructural   |   |  |                 |  |   |  |   |  |    |  |    |  |
| 1               |   |  |                 |  |   |  |   |  |    |  |    |  |
| 0               |   |  |                 |  |   |  |   |  |    |  |    |  |
| NR              |   |  |                 |  |   |  |   |  |    |  |    |  |
| <p>5.3</p>      | <p><b>Describe the interaction between processing and storage in the <i>microprocessor</i>.</b></p> <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 |  |
| Multistructural |   |  |                 |  |   |  |   |  |    |  |    |  |
| 2               |   |  |                 |  |   |  |   |  |    |  |    |  |
| 1               |   |  |                 |  |   |  |   |  |    |  |    |  |
| 0               |   |  |                 |  |   |  |   |  |    |  |    |  |
| NR              |   |  |                 |  |   |  |   |  |    |  |    |  |
| <p>5.4</p>      | <p><b>Describe why hardware will only function usefully when software controls the processing.</b></p> <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 |  |
| Multistructural |   |  |                 |  |   |  |   |  |    |  |    |  |
| 2               |   |  |                 |  |   |  |   |  |    |  |    |  |
| 1               |   |  |                 |  |   |  |   |  |    |  |    |  |
| 0               |   |  |                 |  |   |  |   |  |    |  |    |  |
| NR              |   |  |                 |  |   |  |   |  |    |  |    |  |

