No. 111/2

EDUCATIONAL QUALITY AND ASSESSMENT PROGRAMME

INFO. & COM. TECH.

Assessment Schedule 2017

South Pacific Form Seven Certificate

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SPSFC 2017 Information and Communications Technology: Assessment Schedule

SECTION A

			Response Level				
Item No.	**Skill Level**	**Evidence**	**Extended Abstract**	**Relational**	**Multistructural**	**Unistructural**	**Weak**
1.1	2	• The source code is distributed with the software • The customer can modify the source code • The customer can redistribute the source code (with the same license/restrictions)			*Two - three strengths are described or given in detail*	*One correct answer/ idea given*	*Incorrect, irrelevant*
1.2	1	<table><tr><td>Microsoft office</td><td></td></tr><tr><td>Open office</td><td>√</td></tr><tr><td>Mozilla Firefox</td><td>√</td></tr><tr><td>Windows OS</td><td></td></tr></table>				*One correct software identified*	*Incorrect*
1.3	3	There are TWO methods of installation. Installing open source software depends on your operating system. This is a how-to compilation for multiple operating systems; read the appropriate section for your OS. **For most such systems, you can probably use the OSs package manager to install a pre-built binary package.** This is always the recommended method. ***Method 1: Linux/Unix/Unix-Like Systems*** **Alternatively, you could follow these steps:** • Download and uncompressed the source code. • In the terminal, move into the extracted directory. • Run "./configure" to configure the software. • Run "make" to compile the software. • Run "make install" to install the software.		*Choose the correct method and list all the steps for carry-out for the installation.*	*Identify steps on how to install, compilation, download, configure, run open source*	*One correct method identified*	*Incorrect, irrelevant*

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Method2: Microsoft Windows

Acknowledge that Windows is not a friend of open source software.

Go to the project website.
Check for ports of the program. Find a port for either Windows or your version of Windows.
Download and run the installer.
Once installed, shortcuts will likely be created.

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<td></td>
<td></td>
</tr>
<tr>
<td>1.4a</td>
<td>1</td>
<td>
<table>
<tr><th></th><th></th><th>Image file</th><th>Sound file</th><th>Video file</th></tr>
<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>
</table>
</td>
<td></td>
<td></td>
<td></td>
<td>One correct answer in each row</td>
<td>Incorrect, irrelevant</td>
</tr>
</table>

1.4b	1	Object animation is a form of stop motion animation that involves the animated movements of any non-drawn object such as toys, blocks, dolls, etc. which are not fully malleable, such as clay or wax, and not designed to look like a recognizable human or animal character.				*Correct definition or answer which include some keywords like motion, movements)*	*Incorrect answer /definition – no keyword included*
1.5	1	Microphone, headphones, speakers, sound card				*One correct answer by choosing any audio peripherals*	*Incorrect answer*
2.1	1	**Piracy:** refers to unauthorized duplication of copyrighted content that is then sold at substantially lower prices in the 'grey' market.				*Correct definition or answer which include some keywords like unauthorized , copyrighted*	*Incorrect answer*
2.2	2	Threats posed by computer criminals including hackers and crackers: • unauthorized access to computer systems for malicious purposes (by hackers) • create and share programs designed to gain unauthorized access to computer systems with malicious motives or disrupt networks which can be destructive and costly (by crackers) • Fraud and identify theft using "computer as target" and "computer as tool" crime • Information warfare • Phishing scams • Spam			*Describes TWO threats*	*Identifies ONE threat*	*Incorrect answer*

2.3	3	**Concern on collection and use of data (privacy)** • The state of privacy in the 21st century is a worldwide concern (especially the introduction of new technologies and the use of internet) which leads to a number of social and ethical implications that cause debate and concern. People have to invade other people's personal information either through theft or carelessness which resulted in committing crimes. **Solution:** New laws and regulation (like Privacy Act) are developed to suite the current business environment in terms of information sharing		*Explain and highlight solution to ethical implications*	*Identify and highlight some keywords like Privacy Act, laws, legislation*	*Identify and explain data collection and usuage*	*Incorrect answer , irrelevant*
2.4	3	**Health and Safety issues:** • Back and neck problems / strain (sitting posture) • Repetitive Strain Injury (RSI) – damages to fingers and wrists (from typing) • Eyestrain and headaches – caused by staring at a computer screen for too long or bad lighting in the room • Mental health – avoid noisy environment		*Identify and explain THREE health issues*	*Identify and explain TWO health issues*	*Identify and explain ONE health issues*	*Incorrect , irrelevant*
2.5	3	**Connection between climate change and ICT:** Many of the technologies we use every day consume a lot more resources and power than they need to and using and manufacturing them can create a mess. A few of the ways that technologies can harm the environment are: • Waste - manufacturing technology create large amounts of waste and use computers and electronic devices get thrown out when they break or become outdated (called "technotrash"). These electronic devices contain all sorts of hazardous materials that they are very unsafe for the environment. They need to be disposed of using special methods like landfills.		*Explain THREE* *(candidates have to include some keywords like waste, electronics, devices, pollution, resources)*	*Identify and explain TWO*	*Identify and explain ONE*	*Incorrect, irrelevant*

		• Pollution – air, water, heat and noise pollution can all be caused by producing and using technology • Consuming resources – non renewable resources including precious metal like gold are used to make technology. Many others such as coal are consumed to generate the electricity to use technology. Even though some renewable resources like trees and water are becoming contaminated or are used up faster.					
2.6	3	**Challenges – Intellectual Property owners:** With the introduction of ICT has created challenges owners of Intellectual Property (IP) challenges their right to control the way intellectual property ("original creative work manifested in a tangible form that can be legally protected) is used, accessed or distributed through available communication media for instance. Trademarks and industrial design are listed as industrial property and copyright includes works of art and computer programs. Intellectual Property law is one of the main challenge that gives protection and certain rights for owners. For example, intellectual property of software - lack of insufficient regulations to govern the sector		*Explain challenges faced by Intellectual Property owners by including some keywords like industrial property, copyright, trademarks, software)*	*Explain keywords like industrial property, copyright etc.*	*Explain Intellectual Property*	*Incorrect, irrelevant*
3.1a	3	Editor • Allows John to enter the program code • Colour coding keywords • Auto-completes code as you type Compiler • Transforms the written source code into machine code Debugging tools • Highlights errors in the code • Suggests possible solutions		*Explain THREE correct answers* *(Candidates have to list all tools used and explain each steps when writing the program. Some keywords to be used are editor, compiler, debugging)*	*Explain TWO correct answers*	*Explain ONE correct answer*	*Incorrect, irrelevant*

3.1b	1	WagesEarned = 50 Pay = **50** WagesEarned = 200 Pay = ***250***				*One correct answer*	*Incorrect, irrelevant*

3.1c	4	INPUT Garments
		
		INPUT Hours
		
		PerGarment = 2 + Garments
		
		PerHour = 5 + Hours
		
		IF PerGarment > PerHour THEN
		
		OUTPUT PerGarment
		
		ELSE
		
		OUTPUT PerHour
		
		END IF
			Answer should have FOUR statements and be visible in the program.
			
			• *Input garments and hours*
			• *2 * number of garments , 5 * hours*
			
			(Comparing the two answers)
			
			• *Output the piece rate if it is greater*
			
			Outputting the hour rate if it is greater
				Answer should have THREE statements (mentioned on the left)	*Answer should have TWO statements (mentioned on the left)*	*Answer should have ONE statements (mentioned on the left)*	*Incorrect, irrelevant*

<table>
<tr>
<td>3.2a</td>
<td>1</td>
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<table>
<tr><th></th><th>High –Level Code</th><th>Machine Code</th></tr>
<tr><td></td><td>Instructions use words</td><td>instructions are in binary code</td></tr>
<tr><td></td><td>Designed to be read by human programmers</td><td>Designed to be read by the computer</td></tr>
<tr><td></td><td>Can be portable/translated for different machines</td><td>Specific to a particular machine</td></tr>
</table>
</td>
<td></td>
<td>Three correct answers

(Candidate have to choose ONE in each row - High Level Code VS Machine Code)</td>
<td>Two correct answers</td>
<td>One correct answer</td>
<td>Incorrect, irrelevant</td>
</tr>
<tr>
<td>3.2b</td>
<td>2</td>
<td>

Translates one line of high level code at a time…
….and executes it
…stops when it finds an error
…can be resumed

</td>
<td></td>
<td>Three correct answer

(Candidates have to list the steps)</td>
<td>Two correct answer</td>
<td>One correct answer</td>
<td>Incorrect answer, irrelevant</td>
</tr>
<tr>
<td>3.3</td>
<td>1</td>
<td>Define debugging:

Involves locating and correcting code errors in a computer program
Is part of the software testing process and is an integral part of the entire software development lifecycle

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<td></td>
<td></td>
<td></td>
<td>One correct answer

(Candidates have to choose any ONE correctly answer)</td>
<td>Incorrect answer, irrelevant</td>
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<tr>
<td>4.1</td>
<td>1</td>
<td>A location connected to the internet that maintains one or more pages on the World Wide Web.</td>
<td></td>
<td></td>
<td></td>
<td>Explain by including connection to internet as keywords)</td>
<td>Incorrect, irrelevant</td>
</tr>
</table>

4.2	2	Description: When we create a new database (MySQL), we must specify the first three arguments to mysqli object (servername =local host, username and password)			*Answer specify two arguments*	*Answer specify one argument*	*Incorrect, irrelevant*
4.3	2	Design elements are • Colour – to generate emotions • Line – can be used in wide range of purpose • Shape • Texrure • Space, form, unity/harmony			*List few elements* *(2-3)*	*List only ONE*	*Incorrect, irrelevant*
4.4	2	• Tags defined – after you have written the HTML code, save it somewhere like your desktop for easy retrieval . Use the file extension .htm or .html • Create a CSS file- now create a new Notepad document. Click Start – All Programs – Notepad • Lack the Stylesheet. Change the colour of the text			*Describes The steps correctly*	*List only ONE step* *Lacks description*	*Incorrect, irrelevant*
4.5	2	To make the website aesthetically pleasing, easy to use, engaging and effective with the following principles: • Purpose – always caters to the needs of the user • Communication • Colours, images • Navigation – easy to navigate through			*Outlines 2-4 principles*	*Outlines only one principle*	*Incorrect, irrelevant*
4.6	3	Front-end versus Back-end • A website is a mixture of HTML, CSS and JavaScript which are all controlled by the browser (available on front-end). For example, if you are using Google Chrome or Firefox, the browser is what translates all of the code in a manner for you to see and with which to internet such as fonts, colours, drop-down menus. In order for all of this to work, though		*Explain both front-end (content) and back-end (programming) works*	*Explain how contents (front-end) or programming (back-end) works*	*Define website and database*	*Incorrect, irrelevant*

<table>
<tr><td></td><td></td><td>there has to be something to support the front-end; this is where the back-end comes into play.
• The back-end has three parts to it: server, application and database. For example, a customer trying to purchase a plane ticket using a website- everything that the customer sees on the webpage is the front-end but once the customer enters all of his or her information such as their names, billing address, destination etc., the web application stores the information in a database that is available on the server which the website is calling for information.</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>5.1</td><td>1</td><td><table>
<tr><th></th><th>Statement</th><th>True</th><th>False</th></tr>
<tr><td>i)</td><td>CPU stands for Central Processing Unit</td><td>√</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>√</td></tr>
</table></td><td></td><td></td><td></td><td>Answer ONE correct in ii) and iii) rows</td><td>Incorrect, irrelevant</td></tr>
<tr><td>5.2a</td><td>1</td><td>Intel® Core i5 – 7200U</td><td></td><td></td><td></td><td>One correct answer</td><td>Incorrect, irrelevant</td></tr>
<tr><td>5.2b</td><td>1</td><td>8 GB</td><td></td><td></td><td></td><td>One correct answer</td><td>Incorrect, irrelevant</td></tr>
</table>

5.3	1	BASIC, C, C++, COBOL, Java, FORTRAN, Pascal,				*Answer only ONE*	*Incorrect, irrelevant*
5.4	1	Comprising a long sequence of binary digital zeros and ones (bits)				*Answer should include keywords like binary numbers , zero & ones)*	*Incorrect, irrelevant*
5.5	3	Microprocessor requirement /detection/differentiation: • An embedded microprocessor designed especially for handling the needs of an embedded system which require less power, so these processors are very small and draw less power from the source. • An embedded processor is programmed specifically for the work it is intended to do. It is differentiated on the basis of their clock speed, storage size and voltages.		*Explain and list all THREE - requirement, detection, differentiation about the embedded microprocessor)*	*Explain TWO*	*Explain ONE*	*Incorrect, irrelevant*
5.6	4	Characteristics/ composition /Importance: • Embedded system is a combination of computer hardware and software. The important characteristics of embedded systems are speed, size, power, reliability, accuracy, adaptability. It performs the operations at high speed and can be used for real-time applications. The size of the system and power consumption should be very low then the system can be easily adaptable for different situations. • Embedded system hardware includes elements like user interface, Input/output interfaces, display and memory etc. It comprises of power supply, processor, memory, timers, serial communication ports and system application specific circuits.	*Explain and list the THREE- characters, composition, and importance of software.* *(Candidates have to list all characteristics, composition , importance of software about the embedded*	*Explain two*	*Explain one*	*Define embedded system*	*Incorrect, irrelevant*

		• Embedded system software is written in a high-level language and then compiled to achieve a specific function within a non-volatile memory in the hardware.	*microprocessor)*				