



**G.C.E Advance Level ICT 2023 (Gr 12)**  
**Marking Scheme**

**Term – 3, 2023 Examination**

**Field Work Center (FWC)**

### ***Final marks distribution***

Part I	$2 \times 40 = 80$ marks
Part II A	$20 \times 4 = 80$ marks
Part II B	$20 \times 2 = 40$ marks
Total	$= 200$ marks
Final	$= 200 \div 2$
	$= 100$

### **Part I**

<b>1</b>	<b>3</b>	<b>11</b>	<b>3</b>	<b>21</b>	<b>2</b>	<b>31</b>	<b>1</b>
<b>2</b>	<b>3</b>	<b>12</b>	<b>4</b>	<b>22</b>	<b>2</b>	<b>32</b>	<b>5</b>
<b>3</b>	<b>4</b>	<b>13</b>	<b>3</b>	<b>23</b>	<b>1</b>	<b>33</b>	<b>3</b>
<b>4</b>	<b>2</b>	<b>14</b>	<b>2</b>	<b>24</b>	<b>4</b>	<b>34</b>	<b>1</b>
<b>5</b>	<b>2</b>	<b>15</b>	<b>1</b>	<b>25</b>	<b>4</b>	<b>35</b>	<b>2</b>
<b>6</b>	<b>5</b>	<b>16</b>	<b>3</b>	<b>26</b>	<b>2</b>	<b>36</b>	<b>3</b>
<b>7</b>	<b>4</b>	<b>17</b>	<b>4</b>	<b>27</b>	<b>4</b>	<b>37</b>	<b>2</b>
<b>8</b>	<b>2</b>	<b>18</b>	<b>5</b>	<b>28</b>	<b>5</b>	<b>38</b>	<b>5</b>
<b>9</b>	<b>5</b>	<b>19</b>	<b>4</b>	<b>29</b>	<b>4</b>	<b>39</b>	<b>2</b>
<b>10</b>	<b>1</b>	<b>20</b>	<b>3</b>	<b>30</b>	<b>3</b>	<b>40</b>	<b>4</b>

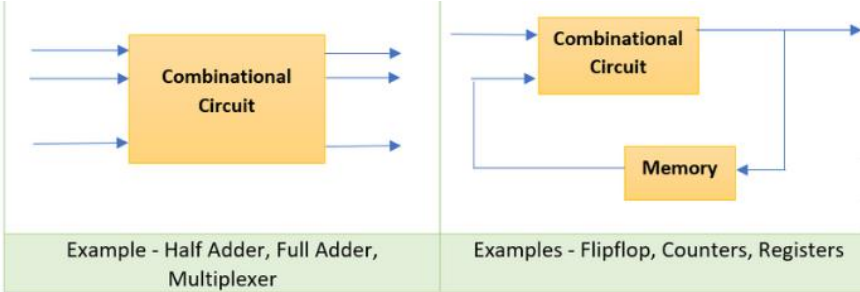
## Part II A Answers

Question No	Answers	Marks										
(1) (a) i.	9 bits	2 marks										
ii	Parallel computing is a type of computation in which many programs or processes are done simultaneously	4 marks										
iii	<table><tr><th>SRAM</th><th>DRAM</th></tr><tr><td>Less Storage</td><td>Large storage</td></tr><tr><td>Low density</td><td>High density</td></tr><tr><td>Used in cache memory</td><td>Used in main memory</td></tr><tr><td>Expensive</td><td>Cheaper</td></tr></table>	SRAM	DRAM	Less Storage	Large storage	Low density	High density	Used in cache memory	Used in main memory	Expensive	Cheaper	4 marks
SRAM	DRAM											
Less Storage	Large storage											
Low density	High density											
Used in cache memory	Used in main memory											
Expensive	Cheaper											
(b) i	IaaS PaaS SaaS	2 marks										
ii	B – Decode instruction C – Execute comments D – Store result in memory	4 marks										
iii	PROM EPROM EEPROM	4 marks										
(2) (a) i	$55_8$ $150_8$ $104_{10}$	4 marks										
ii	$77 = 01001101$ $-41 = 11010111$	4 marks										

(b) i	<div>or</div> <div></div> <div></div>	4 marks															
ii	<div>AB</div> <table><tr><td></td><td>00</td><td>01</td><td>11</td><td>10</td></tr><tr><td>0</td><td>1</td><td>0</td><td>0</td><td>1</td></tr><tr><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td></tr></table> <div><math display="block">F = \overline{B} + AC</math></div>		00	01	11	10	0	1	0	0	1	1	1	1	0	1	4 marks
	00	01	11	10													
0	1	0	0	1													
1	1	1	0	1													
iii		4 marks															
(3) (a) i	A process is basically a program in execution	2 marks															
ii	Long Term Short term Medium term	6 marks															
iii	Paging Enhance date security	4 marks															
(b) i	Creates a table of pointers (index) at the time of the file creation.	2 marks															

ii	No external fragmentation Each block contains pointer to next block	2 marks
(c)	$2^{20}$ Frames	4 marks
(4) (a) i	Adding new device don't disturb data communication Its Provides high security	2 marks
ii	Hub <ul style="list-style-type: none"> <li>• More data traffic</li> <li>• Layer 1 device</li> </ul> Switch <ul style="list-style-type: none"> <li>• Less data traffic</li> <li>• Layer 2 device</li> </ul>	2 marks
(b)	Proxy server DNS server DHCP server FTP server	4 marks
(c) i	More flexibility Less cost Improved call quality	4 marks
ii	Control the remote access	4 marks
(d)	Q – Recruitment Analysis R – Coding and Testing S – Evaluation	4 marks

## Part II B Answers

(1) (a) i		3 marks
ii	SR flip flop JK flip flop D flip flop <ul style="list-style-type: none"> <li>▪ Use as a counter</li> <li>▪ Use as a memory register</li> </ul>	3 marks
(b) i	$F = A'B'C'D' + A'B'CD' + AB'C'D' + AB'C'D + AB'C'D + ABCD' + ABCD$	4 marks
ii	$  \begin{aligned}  F &= A'B'D' (C' + C) + AB'D' (C + C') + ABC (D + D') \\  &= A'B'D' + AB'D' + ABC \\  &= B'D' (A' + A) + ABC \\  &= B'D' + ABC  \end{aligned}  $	6 marks
iii	Give to open marks	4 marks
(2) (a) i	Connection control Error checking Service point addressing Flow control Note – If be suitable answer give marks	3 marks
ii	Symmetric key encryption Asymmetric key encryption	3 marks
(b) i	Router Firewall Switches Proxy server UTP and Fiber optical cable	5 marks
ii	Suitable diagram with mention all devices	5 marks

iii					4 marks						
	Units	Subnet mask	Network ID	Usable Range							
	Admin	255.255.255.240	192.168.100.0	192.168.100.1 to 192.168.100.14							
	Accounting	255.255.255.192	192.168.100.0	192.168.100.1 to 192.168.100. 62							
	Sports	255.255.255.248	192.168.100.0	192.168.100.1 to 192.168.100.6							
	ICT	255.255.255.224	192.168.100.0	192.168.100.1 to 192.168.100.30							
Note – If be suitable answer give marks											
(3) (a) i	Waterfall model – image Advantages <ul style="list-style-type: none"><li>Simple method and easy to use</li><li>Suitable for similar products</li><li>Phases are clear</li></ul> Disadvantages <ul style="list-style-type: none"><li>Risk is high</li><li>Not suitable for complex projects</li></ul>				4 marks						
ii	<table><tr><th>Black box Testing</th><th>White box Testing</th></tr><tr><td>Using acceptance testing</td><td>Using other testing</td></tr><tr><td>Implementation knowledge is not required</td><td>Implementation knowledge is required</td></tr></table> Note – If be suitable answer give marks				Black box Testing	White box Testing	Using acceptance testing	Using other testing	Implementation knowledge is not required	Implementation knowledge is required	4 marks
Black box Testing	White box Testing										
Using acceptance testing	Using other testing										
Implementation knowledge is not required	Implementation knowledge is required										
(b) i	Observation Interview Questionnaire Search all Records				4 marks						
ii	Functional Requirement <ul style="list-style-type: none"><li>Search the book detail</li><li>Check the user name password</li><li>Identify the ISBN number</li></ul> Non - Functional Requirement <ul style="list-style-type: none"><li>Perform efficiency</li><li>User security</li></ul>				4 marks						

	<ul style="list-style-type: none"> <li>Frequently received book information</li> </ul> <p>Note – If be suitable answer give marks</p>	
iii	<p>A - Display the facility to search the books.</p> <p>B- Provide the name or author details of the required books</p> <p>C - Display the location of the books</p> <p>D - Present the books and book cover to the user</p>	<b>4 marks</b>

Sir UDULA PRIYANKARA