

## **GCE AL Examination, August 2012 (AL/2012/20/E-II) – MCQs**

### **(Model Answers)**

Question Number	Answer								
1	4	11	5	21	5	31	3	41	2
2	1	12	2	22	5	32	4	42	3
3	3	13	2	23	3	33	1	43	5
4	2	14	1	24	3	34	2	44	3
5	1	15	2	25	5	35	5	45	3
6	2	16	2	26	1	36	1	46	4
7	4	17	4	27	3/2	37	4	47	3
8	2	18	3	28	3	38	4	48	2
9	4	19	2	29	1	39	2	49	1
10	1	20	4	30	2	40	1	50	2

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part A**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
1	(a)	Multiprogramming Time sharing	2 2	4
	(b) i	Round trip delay time (RTD)/(RTT) - <i>Donor Explain in book</i>		1
	(b) ii	131.111.8.46		1
	(b) iii	Class B		1
	(b) iv	0%		1
	(C)	Running Swapped out and blocked	1 1	2
2	(a)	A system is a group of <u>interrelated</u> , <u>interacting</u> resources forming a <u>common goal</u> . — <i>specific task, call</i> <i>(only for this year)</i> Or A <u>purposeful collection</u> of <u>inter related components</u> working together to <u>achieve common objective</u>		2
	(b)	Resource Interrelated Interacting (All three with at least 2 resources)  Common goal — <i>communication / call</i>	1 1	2
	(c)	Open Justification Interacts with the outside world	1 1	2
	(d) i	Functional Discussion <i>Discriminate.</i> <i>It is a service</i>	1 1	2

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part A**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
	(d) ii	<p>Non functional Discussion Limitation or costatus</p>	1 1	2
3	(a) i	If the remainder of the division of the number by 2 is 1, then the number is odd, otherwise even		1
	(a) ii	<pre> graph TD     Start([Start]) --&gt; Read[/Read a positive integer/]     Read --&gt; Process[x = remainder of the input devideed by 2]     Process --&gt; Decision{ x = 1 ? }     Decision -- True --&gt; Odd([Odd Number])     Odd --&gt; End([End])     Decision -- False --&gt; Even([Even number])     Even --&gt; End   </pre> <p>1 Mark for process &amp; decision in <u>box</u> only for that year. If the above method is acceptable and the flowchart implements it give 2 marks.</p>		2

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part A**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
	(a) iii	<p>If the pseudo code represents the flowchart, give 2 marks.</p> <p>Start/BEGIN</p> <p>Read a positive integer</p> <p>Divide the number by 2 and get the remainder</p> <p>If the remainder equals 1</p> <p>Then number is odd</p> <p>Else number is even → Display odd</p> <p>Stop/END → Display Even</p> <p>with or without end if.</p> <p>Note: it does not matter whether the flowchart is correct.</p>		2
	(b)	$  \begin{array}{r}  15 \Rightarrow 00001111 \\  5 \Rightarrow 00000101 \\  -5 \Rightarrow 11111010 + 00000001 \\  \hphantom{-5} \Rightarrow 11111011 \\  \begin{array}{r}  0000\ 1111\ (15) \\  +\ 1111\ 1011\ (-5) \\  \hline  0000\ 1010  \end{array}  \end{array}  $ <p>Ignore the carry</p>	1 1 1 1 1 1	5
4	(a)	<p>Privacy means <u>protection of personal information</u> in computer data bank from abuse.</p> <p><del>The</del> any meaning of <u>illegal copy</u>.</p> <p>Piracy of software means making of <u>illegal copies</u> of software on which the user has no copyright or any other right.</p>	1 1	2
	(b)	<p>Mobile computing refers to the <u>use of small and portable computing devices</u> in</p> <p><u>wireless enabled networks</u></p> <p>that provide <u>wireless connections</u> to a central main server.</p>	1 1 1	3

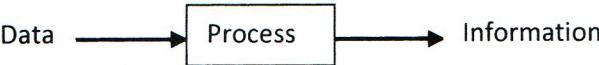
**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part A**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
	(c) i	Video conferencing		2
	(c) ii	Network devices Any Audio/Video devices Computer/Servers	1 1 1	3

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part B**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
1	(a) i	<p>Suitable System such as payroll system</p> <p>Difference – Process, data(input), information(output)</p> <p>Note:</p>  <p>Any expression represents this idea (explanation or diagram)</p>	1 1	2
	(a) ii	<p>1. in-Accuracy 2. In-Efficiency 3. Data duplication 4. Need for large Physical space</p> <p><b>Any three from above</b> or any other acceptable reason.</p> <p>Note: Additional marks should not be given for the duplicate meanings. Ex. In-Efficiency and slowness in searching should be treated the same.</p>	1 1 1 1	3
	(a) iii	<p>(1) Hardware Any physical (tangible) objects in the computer.</p> <p>(2) Software Instruction given to the computer.</p> <p>(3) Firmware Program required for booting up a computer.</p>	1 1 1	3

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part B**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks																																																					
1	(b) i			3																																																					
	(b) ii	<table border="1"> <thead> <tr> <th>Manual/Switch (A)</th> <th>Timer (B)</th> <th>Sensor (C)</th> <th>Not C</th> <th>B and (Not C)</th> <th>A or (B and (Not C))</th> </tr> </thead> <tbody> <tr><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>1</td><td>0</td><td>1</td><td>0</td><td>0</td><td>1</td></tr> <tr><td>1</td><td>0</td><td>0</td><td>1</td><td>0</td><td>1</td></tr> <tr><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td></tr> <tr><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>0</td><td>0</td><td>0</td><td>1</td><td>0</td><td>0</td></tr> </tbody> </table>	Manual/Switch (A)	Timer (B)	Sensor (C)	Not C	B and (Not C)	A or (B and (Not C))	1	1	1	0	0	1	1	1	0	1	1	1	1	0	1	0	0	1	1	0	0	1	0	1	0	1	1	0	0	0	0	1	0	1	1	1	0	0	1	0	0	0	0	0	0	1	0	0	2
Manual/Switch (A)	Timer (B)	Sensor (C)	Not C	B and (Not C)	A or (B and (Not C))																																																				
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0	0	0	1	0	0																																																				
	(b) iii	$D = A + (B \cdot \bar{C})$ $A + B \cdot \bar{C}$		2																																																					
2	(a)	<p>The paragraph tag inserts a blank line but the break tag does not insert a blank line</p>	1 1	2																																																					

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part B**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
	(b)	<p>Our evergreen school days will not come back again</p> <p>.....</p> <p>From the nursery to high school we learnt the best</p>	1 1 1	3
	(c)	<pre>&lt;html&gt; &lt;head&gt; &lt;title&gt; AgriSL &lt;/title&gt;  &lt;/head&gt; &lt;body&gt; &lt;h1&gt; Agriculture in Sri Lanka &lt;/h1&gt; &lt;img src="agriSL.jpg" ALT="Agri SL" /&gt;</pre> <p><i>Not essential.</i></p> <p>&lt;p&gt;Sri Lanka is an agricultural country. Agriculture is one of the main sectors of the Sri Lankan economy.&lt;/p&gt;</p> <p>&lt;p&gt;The main plantation crops are&lt;/p&gt;</p> <ul style="list-style-type: none"> <li>&lt;li&gt; tea&lt;/li&gt;</li> <li>&lt;li&gt; rubber&lt;/li&gt;</li> <li>&lt;li&gt; coconut &lt;/li&gt;</li> </ul> <p>&lt;/ul&gt;</p> <p>&lt;p&gt;Links to agricultural firms&lt;/p&gt;</p> <p>&lt;a href = "http://www.jayagrotec.com"&gt;Jay Agro Technologies&lt;/a&gt;</p> <p>&lt;br /&gt; <i>— with or without</i></p> <p>&lt;a href = "http://www.lkagrisys.com"&gt;Lanka Agri Systems Pvt Ltd.&lt;/a&gt;</p> <p>&lt;br /&gt; <i>—</i></p> <p>&lt;/body&gt;</p> <p>&lt;/html&gt;</p> <p><i>html, head, body.</i></p>	1 2  1.  2 1 1 1 1 1 1 1 1 1	10

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part B**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
3	(a) i	$2^{16} = 8,192 \text{ Bytes} = 8 \text{ KB}$ <del><math>65536 = 8192 \text{ bytes}</math></del> <del><math>1024 = 8 \text{ KB}</math></del> <del><math>8 \text{ KB} = 64 \text{ kbit}</math></del>		1
	(a) ii	0 to $(2^{16} - 1)$		1
	(a) iii	$8x8/4 = 16$ ← number of pages 1 bit → byte × 8 4 bits are sufficient (→ -13)	1 1	2
3	(b) i	<p>192.168.1.254                          192.168.2.254</p> <p>A    gateway                              B</p>		5
		(Each IP address – 1 mark , Gateway – 1 mark)		
	(c)	<p>i. firewall A firewall is a computing devices that <u>enforces a set of rules to prevent unauthorized access to an internal network while allowing legitimate communications to pass.</u></p> <p>ii. proxy server A proxy server is a computer system or an application that acts as an <u>intermediary</u> for requests from <u>clients seeking resources from other servers</u>.</p> <p>iii. honey pots A honeypot is a <u>trap set to detect, deflect or counteract attempts at unauthorized use of information systems.</u></p>	2 2 2	6

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part B**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
4	(a)	Relationship "Obtain Marks for"		2
	(b)	<p>Class – Has – Student : One-to-many One class has many student while one student belongs to a class</p> <p>Student -- has – Desk: One-to-one A student has a desk while one desk is for a single student</p> <p>House –has—Student: One-to-many</p> <p>A student should belong to a house while one or more student belong to the same house</p> <p>Student—Obtains Marks for –Subject : Many-to-many</p> <p>A student sit for multiple subjects and for a single subject is being taken by one or more students</p>	1 1 1 1 1	4
	(c)	<p>Tables <del>or</del> relations with following information</p> <p>Desk(<u>DeskID</u>) House(<u>HouseID</u>, Name) Class(<u>ClassID</u>) Student(<u>StudentID</u>, NIC, Name) Subject(<u>SubjectID</u>, Title) Marks(<u>StudentID</u>, <u>SubjectID</u>, Marks)</p> <p>Note: table 'Marks' and attribute 'Marks' can have any meaningful name <i>Not draw table subtom 2 Marks</i></p>	1 1 1 1 1 1	6
	(d)	<p>Desk – DeskID House-HouseID Class-ClassID Student – StudentID Subject – SubjectID Marks – StudentID+SubjectID</p> <p>One of the above</p> <p>Note: table 'Marks' can have any meaningful name</p>		1

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part B**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks				
	(e)	<p>select Marks from Marks where StudentID='ST001' and SubjectID='AL001'</p> <p>Note: table 'Marks' and attribute 'Marks" can have any meaningful name</p>	1+1	2				
5	(a)	<p><b>Variable Name Data Type</b></p> <table> <tr> <td>datasummary</td> <td>Dictionary</td> </tr> <tr> <td>datakeys</td> <td>List</td> </tr> </table> <p>Note –</p>	datasummary	Dictionary	datakeys	List	1 1	2
datasummary	Dictionary							
datakeys	List							
	(b)	<p># example.py</p> <p>Note -</p> <ol style="list-style-type: none"> <li>What is essential is the comment symbol # followed by the program name <b>example.py</b>.</li> <li>The comment character # can start at any position in the line.</li> <li>Character spaces in between these two parts have no effect.</li> <li>In addition to these two parts any other words may have been included anywhere in the comment line for elaboration, but will not get any additional marks.</li> </ol>		2				
	(c)	<p><b>Open a file named 'input.txt' to read data and return a corresponding stream.</b></p> <p>Opean a file named 'input.txt' for reading</p> <p><b>Return a file stream(file object .....</b>)</p> <p>Note -</p>	1 1	2				

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part B**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
	(d)	<p>readdata() :</p> <ul style="list-style-type: none"> <li>• Read the data from the input file named 'input.txt'.</li> <li>• Update the tally of numbers in the <b>datasummary</b> dictionary together with the number.</li> <li>• Gather the <b>distinct</b> values in the input file in the <b>datakey</b> list.</li> </ul> <p>printdata() :</p> <ul style="list-style-type: none"> <li>• Write the data in the <b>datasummary</b> dictionary to the file named 'output.txt'</li> <li>• In the order of data in the <b>datakey</b> list</li> </ul> <p>processdata() :</p> <ul style="list-style-type: none"> <li>• <b>sort</b> the symbols in the <b>datakey</b> list</li> <li>• <b>in the ascending order.</b></li> </ul> <p>Note –</p>	2 1 1	6
	(e)	<p>a-3 b-2 d-2 n-2 x-1</p> <p>Note :-</p> <p>1) Characters should be in <b>alphabetic order</b>.      2) The numbers should represent the tally of characters- <b>at least three values must be correct</b>.      3) Character and the tally should be separated by the character –</p>		3

**GCE AL Examination, August 2012 (AL/2012/20/E-II) – Part B**

**(Model Answers)**

Q. No	Section	Model Answer	Marks Break-down	Total Marks
6	(a)	<p>Does not need to visit the book shop physically  Payments could be carried out on-line</p> <p><i>24 hours</i></p>	3 3	6
	(b)	<p>1. Does not have the facility to look at the book before it is selected  2. Needs to follow up to ensure the overall process has been completed  3. In-Secure payment mode  4. Needs credit card  5. Computer literacy</p> <p><b><u>One of the above or any acceptable reason</u></b></p>		4
	(c)	<p>1. By making e-books available on-line  2. By introducing a system to acknowledge each transaction  3. secure website with secure protocols  4. any acceptable alternative payment mechanism  5. Use help facility</p> <p><b><u>One of the above related to the answer given in (b) or any acceptable method</u></b></p>		5