

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

(Model Answers)

Question Number	Answer	Question Number	Answer	Question Number	Answer	Question Number	Answer	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)		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, interacting</u> resources forming a <u>common goal</u> . / specific task (call) Or A <u>purposeful collection of inter related components working together</u> to <u>achieve common objective</u>		2
	(b)	Resource Interrelated Interacting (All three with at least 2 resources) Common goal (Communications) / specific	1 1	2
	(c)	Open Justification Interacts with the outside world	1 1	2
	(d) i	Functional Discussion ribe	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	Non functional Discussion (L & M's definition / constraints) em' be.	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]) --> Read[/Read a positive integer/] Read --> Process[x = remainder of the input divided by 2] Process --> Decision{x = 1?} Decision -- True --> Output1[/Odd Number/] Decision -- False --> Output2[/Even number/] Output1 --> End([End]) Output2 --> End </pre> <p>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 Read a positive integer Divide the number by 2 and get the remainder If the remainder equals 1 Then number is odd (display 'odd') Else number is even (display 'even') Stop/End</p> <p>Note: it does not matter whether the flowchart is correct.</p>		2
	(b)	$ \begin{array}{r} 15 \Rightarrow 00001111 \\ 5 \Rightarrow 0000101 \\ -5 \Rightarrow 11111010 + 00000001 \\ \Rightarrow 11111011 \\ \qquad\qquad\qquad 0000\ 1111\ (15) \\ +\ 1111\ 1011\ (-5) \\ \hline 1\ 0000\ 1010 \end{array} $ <p>Ignore the carry</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	5
4	(a)	<p>Privacy means <u>protection of personal information</u> in computer data bank from <u>abuse</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>	<p>1</p> <p>1</p>	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>	<p>1</p> <p>1</p> <p>1</p>	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 services 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 align="center"> <pre> graph LR Data --> Process[Process] Process --> Information </pre> </p> <p>Any expression represents this idea (explanation or diagram)</p>	<p>1</p> <p>1</p>	2
	(a) ii	<ol style="list-style-type: none"> 1. in-Accuracy 2. In-Efficiency 3. Data duplication 4. Need for large Physical space <p>Any three from above 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>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	3
	(a) iii	<ol style="list-style-type: none"> (1) Hardware Any physical (tangible) objects in the computer. (2) Software Instruction given to the computer. (3) Firmware Program required for booting up a computer. 	<p>1</p> <p>1</p> <p>1</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																																																						
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	$D = A + (B \cdot \bar{C})$ <p align="center"><i>Sum of products or Product of Sums.</i></p>		2																																																						
2	(a)	<p>The paragraph tag inserts a blank line</p> <p>but the break tag does not insert a blank line</p>	<p>1</p> <p>1</p>	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>	<p>1</p> <p>1</p> <p>1</p>	3
	(c)	<p><i>or (4/12)</i></p> <pre> <html> <head> <title> AgriSL </title> </head> <body> <h1> Agriculture in Sri Lanka </h1> <p>Sri Lanka is an agricultural country. Agriculture is one of the main sectors of the Sri Lankan economy.</p> <p>The main plantation crops are</p> tea rubber coconut <p>Links to agricultural firms</p> Jay Agro Technologies
 Lanka Agri Systems Pvt Ltd.
 </body> </html> </pre>	<p>1</p> <p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>1</p> <p>1</p> <p>1</p>	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	$2^{16} = 8,192 \text{ Bytes} = 8 \text{ KB}$		1
	(a) ii	0 to $(2^{16}-1)$		1
	(a)iii	<p>$8 \times 8 / 4 = 16$</p> <p>4 bits are sufficient 7 bits are sufficient</p> <p>Page size = 4 kilobits $2 \frac{4}{8} \text{ KB} = \frac{4 \times 1024}{8}$ $= \frac{2^2 \times 2^8}{2^3} = 2^9$</p> <p>$\frac{2^{16}}{2^9}$ bits = 7 bits</p>	1 1	2
3	(b) i	<p>(Each IP address – 1 mark , Gateway – 1 mark)</p>		5
	(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</u> while allowing legitimate communications to pass.</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 clients seeking resources from other servers.</p> <p>iii. honey pots A honeypot is a <u>trap set to detect, deflect or counteract</u> attempts at unauthorized use of information systems.</p>	2, 1, 0 2, 1, 0 2, 1, 0	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><i>2 marks</i> Student -- has – Desk: One-to-one A student has a desk while one desk is for a single student</p> <p><i>1 mark</i> House –has– Student: One-to-many A student should belong to a house while one or more student belong to the same house</p> <p><i>1 mark</i> Student—Obtains Marks for –Subject : Many-to-many A student sit for multiple subjects and for a single subject is being taken by one or more students</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	4
	(c)	<p>Tables or relations with following information <i>representing following</i></p> <p>Desk(<u>DeskID</u>)</p> <p>House(<u>HouseID</u>, Name)</p> <p>Class(<u>ClassID</u>)</p> <p>Student(<u>StudentID</u>, NIC, Name)</p> <p>Subject(<u>SubjectID</u>, Title)</p> <p>Marks(<u>StudentID</u>, <u>SubjectID</u>, Marks)</p> <p>Note: table 'Marks' and attribute 'Marks' can have any meaningful name</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p>	6
	(d)	<p>Desk – DeskID</p> <p>House–HouseID</p> <p>Class–ClassID</p> <p>Student – StudentID</p> <p>Subject – SubjectID</p> <p>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><i>double check u n m f e n g m n .</i></p> <p>Note: table 'Marks' and attribute 'Marks' can have any meaningful name</p> <p><i>Set left 1 Condition 1</i></p>	(+1)	2
5	(a)	<p><u>Variable Name</u> <u>Data Type</u></p> <p>datasummary Dictionary</p> <p>datakeys List</p> <p>Note –</p>	1 1	2
	(b)	<p># example.py</p> <p>Note -</p> <ol style="list-style-type: none"> 1) What is essential is the comment symbol # followed by the program name example.py. 2) The comment character # can start at any position in the line. 3) Character spaces in between these two parts have no effect. 4) In addition to these two parts any other words may have being included anywhere in the comment line for elaboration, but will not get any additional marks. 		2
	(c)	<p>Open a file named 'input.txt' to read data and return a corresponding stream.</p> <p><u>Open</u> a file named '<u>input.txt</u>' for <u>reading</u></p> <p>Return a file stream(file object)</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"> • Read the data from the input file named 'input.txt'. • Update the tally of numbers in the datasummary dictionary together with the number. • Gather the distinct values in the input file in the datakey list. <p>printdata() :</p> <ul style="list-style-type: none"> • Write the data in the datasummary dictionary to the file named 'output.txt' • In the order of data in the datakey list <p>processdata() :</p> <ul style="list-style-type: none"> • sort the symbols in the datakey list • in the ascending order. <p>Note –</p>	<p>1</p> <p>1</p> <p>1</p> <p>1</p>	6
	(e)	<p>a-3 a - 3 ৯৯৯</p> <p>b-2 b - 2 ৯৯</p> <p>d-2 d - 2 ৯৯</p> <p>n-2</p> <p>x-1</p> <p>Note :-</p> <p>1)Characters should be in alphabetic order.</p> <p>2)The numbers should represent the tally of characters- at least three values must be correct.</p> <p>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)	Does not need to visit the book shop physically Payments could be carried out on-line	3 3	6
	(b)	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 <u>One of the above or any acceptable reason</u>	2	4
	(c)	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 <u>One of the above related to the answer given in (b) or any acceptable method</u>		5