

Revision Sheet

A-Level Computer Science · Unit 12 Software Development

10 vocabulary items · 35 marks of exam questions (6 questions)

Part 1 · Vocabulary review answer key. Section A wants the exact English spelling.

Question	Answer	Marks
1	development life cycle	1
2	maintenance	1
3	structure chart	1
4	state-transition diagram	1
5	states	1
6	integration testing	1
7	alpha testing	1
8	beta testing	1
9	acceptance testing	1
10	adaptive maintenance	1

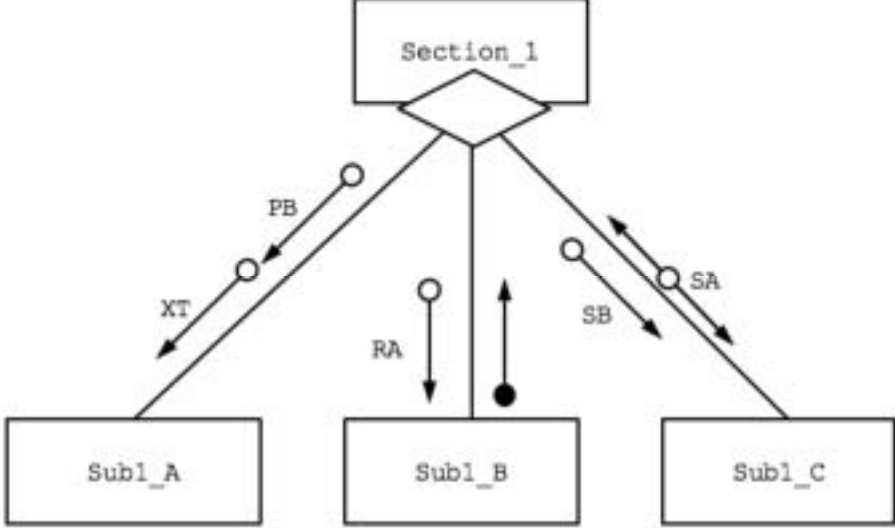
11(a)	<p>Max 3 marks</p> <p>Additional Information:</p> <p>MP1 The (program/source) code/specification</p> <p>MP2 test plan // inputs/test data <u>and</u> expected outputs</p> <p>Explanation:</p> <p>MP3 The structure / design / algorithm of the program of the program needs to be known</p> <p>MP4 so that all paths through the program can be tested</p>
11(b)	Perfective

12(a)	<p>Test string should contain:</p> <ul style="list-style-type: none"> • At least one leading space (before the first word) • at least one trailing space (after the last word) • at least one instance of multiple spaces between words • At least one upper case character <p>Mark as follows:</p> <p>One mark for one correct</p> <p>Two marks for three correct</p> <p>Three marks for all correct</p>
12(b)	<p>One mark for each:</p> <ul style="list-style-type: none"> • Dry run / produce a trace table / walk through the code • Add output statements to allow the code to be tracked • Insert a Breakpoint into the program // use single-stepping to execute instructions // monitor variables using a watch window • Try different test values to see which ones fail <p>Note: Max 2 marks</p>

13(a)	<p>One mark for each underlined part</p> <p>IF <u>DAYINDEX(MyDOB)</u> = <u>5</u> THEN</p>
13(b)(i)	<p>MP1 Value for <u>month</u> is between 1 and 12 (inclusive)</p> <p>MP2 Value of <u>year</u> is <= 2002</p>
13(b)(ii)	<p>MP1 Reference to <u>month</u> and <u>day</u></p> <p>MP2 Clear description for a <u>check</u> that the day number matches with a relevant month (Either day matches with month // month matches with day)</p>

14(a)	<p>One mark for:</p> <ol style="list-style-type: none"> 1 (at least) three intermediate shapes with at least one valid stage names 2 Up and Down arrows between each pair of shapes 3 Design – Coding – Testing labels in correct sequence
14(b)	<p>Downward arrows: result from one stage is input / passed to the next</p> <p>Upward arrows: more work is required at a previous stage to complete the current stage</p>
14(c)	<p>For example:</p> <p>Iterative / Rapid Application Development (RAD)</p>

15(a)	One mark per row															
15(b)	<div>One mark per row</div> <div>Example answer</div> <table><tr><th>Input</th><th>Output</th><th>Next state</th></tr><tr><td>Button-Y</td><td>none</td><td>S3</td></tr><tr><td>Button-Y</td><td>none</td><td>S4</td></tr><tr><td>Button-Z</td><td>Output-B</td><td>S2</td></tr><tr><td>Button-Z</td><td>none</td><td>S1</td></tr></table> <div>Note: Accept other valid answers</div>	Input	Output	Next state	Button-Y	none	S3	Button-Y	none	S4	Button-Z	Output-B	S2	Button-Z	none	S1
Input	Output	Next state														
Button-Y	none	S3														
Button-Y	none	S4														
Button-Z	Output-B	S2														
Button-Z	none	S1														

16(a)	<p>One mark per point to show:</p> <ul style="list-style-type: none"> • module relationships / hierarchy / selection / repetition // how a problem is broken down • the parameters that are passed between the sub-tasks / modules // whether a module is a function or a procedure
16(b)	 <p>One mark for each:</p> <ol style="list-style-type: none"> 1 Four boxes linked as shown correctly labelled (Order of lower 3 not important) 2 Parameters to Sub1_A 3 Parameter to Sub1_B and return value 4 Parameters to Sub1_C 5 Selection diamond