**Software Quality Assurance (Quiz 3) (Time: 30 mins)**

**Marks = 20**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Question 1:** If a program passes all the black-box tests, it means that the program should work properly. Then, in addition to black-box testing, why do you need to perform white-box testing? (05)

**Question 2:** Describe the circumstances, under which you would apply white-box testing, back-box testing, or both techniques to evaluate a COTS component. (05)

**Question 3:** Using the module hierarchy given in Figure 1: (10)

1. Show the orders of module integration for the top-down and bottom-up integration approaches.
2. Estimate the number of stubs and drivers needed for each approach.
3. Specify the integration testing activities (e.g. SIT plan, black box and white box testing, stress testing, endurance, functional, , regression testing, pairwise, intersystem, intrasystem, internal interface testing, external interface testing etc) that can be done in parallel, assuming you have three SIT engineers.
4. Based on the resource needs and the ability to carry out concurrent SIT activities, which approach/technique would you select for this system and why?



Figure 1: Module Hierarchy for the System

**Software Quality Assurance (Quiz 3) (Time: 30 mins)**

**Marks = 15**

**Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Question 1:** Why should integration testing be performed? What types of errors can this phase of testing reveal? (05)

**Question 2:** Suppose that you plan to purchase COTS components and integrate them with your communication software project. What kind of acceptance criteria will you develop to conduct acceptance testing of the COTS components? (05)

**Question 3:** Using the module hierarchy given in Figure 1: (10)

1. Show the orders of module integration for the top-down and bottom-up integration approaches.
2. Estimate the number of stubs and drivers needed for each approach.
3. Specify the integration testing activities (e.g. SIT plan, black box and white box testing, stress testing, endurance, functional, regression testing, pairwise, intersystem, intrasystem, internal interface testing, external interface testing etc) that can be done in parallel, assuming you have three SIT engineers.
4. Based on the resource needs and the ability to carry out concurrent SIT activities, which approach/technique would you select for this system and why?



Figure 1: Module Hierarchy for the System

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