Name: _____ Student ID: _____

Section A

1. *A supermarket has a loyalty scheme that is offered to all customers. Loyalty cardholders enjoy the benefits of either additional discounts on all purchases or the acquisition of loyalty points, which can be converted into vouchers for the supermarket or to equivalent points in schemes run by partners. Customers without a loyalty card receive an additional discount only if they spend more than $100 on any one visit to the store, otherwise only the special offers offered to all customers apply.*

   a. Specify how many tests will be required to ensure Code Coverage. Explain how you have arrived at the number of tests. **[09%]**

   b. Construct a Decision Table for testing software developed according to the above problem description. **[12%]**

   c. Specify the test cases according to the Decision Table you have constructed in part (b). Explain in detail what principles you have used to generate your test cases. Use a simple form of test case specification, i.e., a table with the following headings. **[16%]**

Test case ID	Input values	Expected results

2. *A mail-order company selling flower seeds charges $3.95 for postage and packing on all orders up to $20 value and $4.95 for orders above $20 value and up to $40 value. For orders above $40 value there is no charge for postage and packing.*

   a. If you were using equivalence partitioning to prepare test cases for the postage and packing charges, what valid partitions would you define? **[06%]**

   b. What about non-valid partitions? **[02%]**

   c. Derive test cases for the partitions. Use a simple for of test case specification, i.e., a table with the following headings. **[10%]**

Test case ID	Input values	Expected results

3. *A system is designed to accept scores from independent markers who have marked the same examination script. Each script should have 5 individual marks, each of which is out of 20, and a total for the script. Two markers' scores are compared and differences greater than three in any question score or 10 overall are flagged for further examination.*

   a. Using equivalence partitioning and robust boundary value analysis identify the boundary values that you would explore for this scenario. **[12%]**

Section B

4. Suggest **three** possible problems that could arise if a company does not develop effective configuration management policies and processes. **[09%]**

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5. What do static analysis tools analyse? **[04%]**
   a. Design.
   b. Test cases.
   c. Requirements.
   d. Program code.

6. One of the roles in a review is that of moderator. Which of the following best describes this role? **[04%]**
   a. Plans the review, runs the review meeting and ensures that follow-up activities are completed.
   b. Allocates time in the plan, decides which reviews will take place and that the benefits are delivered.
   c. Writes the document to be reviewed, agrees that the document can be reviewed, and updates the document with any changes.
   d. Documents all issues raised in the review meeting, records problems and open points.

7. Which of the following is correct? **[04%]**
   Debugging is:
   a. Testing/checking whether the software performs correctly.
   b. Checking that a previously reported defect has been corrected.
   c. Identifying the cause of a defect, repairing the code and checking the fix is correct.
   d. Checking that no unintended consequences have occurred as a result of a fix.

8. Which of the following is true? **[04%]**
   a. The developer misunderstood the specification, introducing a mistake into the software that caused a run-time error.
   b. The specification was incorrect (resulting from a mistake) – this carried forward into the software and resulted in a failure when the code was executed.
   c. A failure in the writing of the specification gave rise to an error in the code that was implemented.
   d. A run-time failure in the software was caused by a mistake in the code as written by the developer.

9. Which of the following describes why testing is necessary? **[04%]**
   a. To show that there are no defects in the software.
   b. To reduce the risk of problems occurring when code is implemented.
   c. To decide when the software should be implemented.
   d. To enable the project plan to be followed.

10. Why might developer-only testing be less effective than using testing professionals? **[04%]**
    a. Testers have had training in test techniques, developers have not.
    b. Developers are only doing testing because it is one of their assigned tasks.
    c. It is harder to see your own errors than those of someone else.
    d. Testers have a greater understanding of how the software is meant to work.

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