



Course no : ESGD4204
Course Title: Software Testing

Final Term Exam
Theoretical Exam

Student No: _____
Student Name: _____

Exam Time: 2 Hours

2nd Semester 2010/2011

Date: 17/05/2011

No of Questions: 6

Total Grade: 60

**Try to Answer All
Questions**

Open Book: No

Using Computer: No

Using Calculator: No

First Question

(5 marks)

Distinguish between the following terms:

– Functional testing.

– Non-functional testing.

– Structural testing.

– Maintenance testing.

– Peer rating.

Second Question

(10 marks)

In software development models, Rapid Application Development (RAD) and Agile Development model are some examples of iterative development models. According the previous paragraph answer the following:

1. Discuss with drawing:

A. Iterative development model. (3 marks)

B. Rapid application development model. (2 marks)

C. Agile development model. (2 marks)



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2. When/how testing can be applied for these models? (3 marks)

Third Question

(8 marks)

Choose the correct answer:

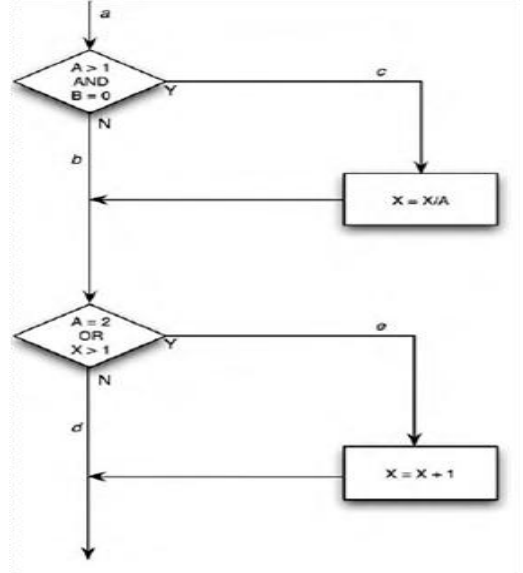
1. When testing is executed exactly the same way as it was the first time using the same inputs, date and environment is called _____.
A. Functional testing. B. regression testing. C. Confirmation testing. D. Structural testing.
2. Structural testing is often referred to as _____.
A. Black-box. B. White-box. C. Glass-box. D. B & C.
3. _____ is the testing of the quality characteristics.
A. Maintenance testing. B. Structural testing. C. Functional testing. D. Non-functional testing.
4. _____ defines how easy it is to maintain the system.
A. Maintenance testing. B. Maintainability. C. Retesting. D. Regression testing.
5. Maintenance testing is triggered by _____.
A. Modification. B. Migration. C. Retirement. D. All above.
6. The objective of code inspections and walkthroughs is to _____.
A. Test. B. Debug. C. Maintain. D. A & B.
7. An error where a referenced variable have a value that is unset or uninitialized is called _____.
A. Date declaration error. B. Input/Output error. C. Data reference error. D. Control flow error
8. An error where a pointer or reference variables are used, does the referenced memory location have the attributes the compiler expect is called _____.
A. Date declaration error. B. Input/Output error. C. Data reference error. D. Control flow error.

Fourth Question

(10 marks)

Assume the following flow chart which represents a small program to be tested, answer the following:

1. Change this flow chart to the way a compiler would generate machine code. (2 marks)
2. Discuss the main problems associated with decision/condition coverage?. (2 marks)
3. By applying white-box testing on the flow chart, generate the following:
 - A. All possible combinations of condition outcomes in each decision by using multiple-condition coverage. (4 marks)
 - B. The test-case input values, and the combinations they cover. (2 marks)



Fifth Question

(10 marks)

True or false:

1. In the v-model, system testing is concerned with testing interfaces between components. ()
2. In the v-model, acceptance testing is focused on verification against specified requirements. ()
3. In iterative life cycles, validation testing is carried out at each increment. ()
4. For every development activity, there is a corresponding testing activity. ()



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5. Component testing may include testing of specific non-functional characteristics only. ()
 6. Regression testing must be done after confirmation testing. ()
 7. The earlier errors are found, the higher the costs of correcting the errors and the lower the probability of correcting the errors correctly. ()
 8. Code inspections is a set of procedures and error-detection techniques for group code reading. ()
 9. Black-box testing is concerned on the internal behavior and structure of the program . ()
 10. White-box approach, test data are derived solely from the specifications. ()

Sixth Question

(17 marks)

1. By applying black-box testing, consider the following case: (9 marks)

The character in column 1 must be an “A” or a “B.” The character in column 2 must be a digit. In this situation, the file update is made. If the first character is incorrect, message X12 is issued. If the second character is not a digit, message X13 is issued.

According the previous paragraph, use cause-effect graphing to:

- A. Extract the causes and effects. (6 marks)
- B. Draw the graph for the causes and effects. (3 marks)

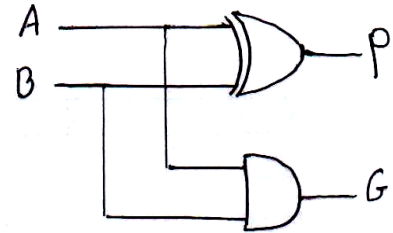


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2. According this logic circuit, apply on-line testing by using an even parity check code. (8 marks)
where: $P = A \text{ XOR } B$ $G = A \text{ AND } B$



End of Questions

Good Luck
Eng. Sami Ayesh