

Reg. No. : 003

Question Paper Code : 51546

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2014

Seventh Semester

Computer Science and Engineering

IT 2032/TT 702/10177 ITE 24 — SOFTWARE TESTING

(Common to Information Technology)

(Regulation 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define: Software Testing.
2. Differentiate fault and failure.
3. What is positive and negative testing?
4. Consider the following code and which test adequacy criteria are satisfied by the given test set:

Test set $T = \{t_1 \langle x = -3, y = -2 \rangle, \langle x = 2, y = -4 \rangle\}$

begin

int x, y;

if(x < 0) && (y < 0)

printf("Both x and y are 0");

else

printf("x or y is 0 or non zero");

end;

5. What is ad-hoc testing?
6. How alpha and beta testing differs?
7. List out the similarities in the testing and development functions.

8. List the kind of training programs given to test engineers.
9. Which deliverables are associated with testing?
10. What is a 'Show Stopper' defect?

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the role of test and debug cycle in development process of software. (12)
- (ii) 'Developer as a tester' - Write the psychological views related to it. (4)

Or

- (b) (i) Write the origin of defects with defect classes.
 - (ii) How defect repository helps in test design and management? Explain.
12. (a) How test cases are generated using the following black box testing approaches:
 - (i) Boundary value analysis. (4)
 - (ii) Equivalence Partitioning. (6)
 - (iii) Cause-Effect graphing. (6)

Or

- (b) Consider the following program code. Apply white box testing based on Control Flow Graph to generate test cases from it.

```
begin
    int x, y, z;
    input(x,y);
    if(x>0) && (y>0)
        z=pow(x,y)
    else if(x<0) && (y>0)
        z=pow((-x),y);
    else if(x>0) && (y<0)
        z=pow((x,(-y));
    else if(x<0) && (y<0)
        z=0;
while(y>0){
    z+=1;
    y--;}
if(x>0) {
    z=1;}
```

13. (a) How unit testing is done in the initial stages of code testing? Explain the various activities involved in it.

Or

- (b) (i) Explain 'defect hash elimination' process involved in designing integration tests. (6)
(ii) How 'Alpha-Omega' method is used for testing classes? Explain. (8)

14. (a) Explain the perceptions and misconceptions about testing.

Or

- (b) (i) Which groups are involved in test planning and policy development? Explain each group's functionalities. (12)
(ii) What are the skills needed by a test specialist? List them. (4)

15. (a) (i) Explain the scope of automation in software testing in detail. (12)
(ii) List the steps for tool selection and deployment. (4)

Or

- (b) (i) Draw the architecture for software test automation and explain all the components of it in detail. (8)
(ii) Explain W-Model and its phases in test automation. (8)
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