Roll No. | | | | | | | | | | | |

Total No. of Pages : 03

Total No. of Questions : 09

B.Tech.(CSE) (2011 Onwards Elective-II) / (IT) (2011 Batch Elective-II)
(Sem.–7,8)

SOFTWARE TESTING AND QUALITY ASSURANCE

Subject Code : BTCS-905
Paper ID : [A2987]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A

1. Discuss the following in brief :

a) Software Review

b) Software Reliability

c) Metrics for Testing

d) Loop Testing

e) Scenario Based Testing

f) SPICE

g) Validation Testing

h) Security Testing

i) Software Debugging

j) RMMM Plan

www.scholarexpress.com

SECTION-B

2. What is Software Configuration Management (SCM)? Explain software change control procedure with the help of block diagram.

3. Consider a program for the determination of division of a student based on the marks scored in three subjects. Its input is a triplet of positive integers (marksl, marks2, marks3) and values are from interval [0,100]. The division is calculated according to following rules:

Marks Obtained (Average)	Division
75 -100	First division with distinction
60-74	First division
50-59	Second division
40-49	Third division
0-39	Fail

Total marks obtained are the average of marks obtained in three subjects. The program output may be one of the [Fail, Third division, Second division, First division, First division with distinction]. Design the test cases for equivalence partitioning.

4. What is unit testing? What type of errors can be detected during unit testing? Discuss with the help of suitable example.

5. What is performance testing? How performance testing is different from stress testing? Discuss with the help of suitable example.

6. Compare and contrast the Capability Maturity Model (CMM) approach and ISO approach for software quality.

www.scholarexpress.com

SECTION-C

7. For the following code, draw control flow graph and identify all feasible independent paths :

```
cin >> a >> b >> c;
x = 5; y = 7;
if (a > b && b > c)
{a = a+1;
x = x + 6;
if (a = 10 || b > 20)
{ b = b +1;
x = y + 4;
}
if (a < 10) || c = 20)
{ b = b + 2;
Y = 4;
}
a = a + b + 1;
y = x + y;
}
if (a > 5 || c < 10)
{ b = c + 5;
x = x + 1;
}
Cout >> x >> y;
```

8. Consider a University Management system. In this system there are various classes like Student, Teacher, Subject, Examination and Courses etc. Consider a class diagram for Student Registration system at this university. Every student is required to register in courses in the beginning of semester. A student can register for maximum two backlog courses in addition to current semester courses offered by the department. Any student is allowed to register for current semester courses if he or she has earned minimum 5.0 CGPA. Explain test case design required for class testing.

9. Explain the following with the help of suitable example :

   a) Testing Web Based System.

   b) Testing Multiplatform Environment.

www.scholarexpress.com