Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 13284

M.E. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2014.

Elective

Computer Science and Engineering

CP 7026 — SOFTWARE QUALITY ASSURANCE

(Regulation 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Define the term 'cost of quality'.

2. Recall basic principles of testing.

3. Differentiate verification and validation.

4. What are the verification techniques in software testing?

5. What do you mean by code coverage testing?

6. State about boundary value analysis with an example.

7. What are finite state models?

8. What is data flow testing?

9. What are the properties of test data adequacy criteria?

10. Define stress testing. Give an example.

PART B — (5 × 16 = 80 marks)

11. (a) Explain about different software quality models. (16)

Or

(b) Discuss how software quality assurance is ensured in a software development system. (16)

12. (a) Illustrate the standards and guidelines for planning and managing software verification. (16)

Or

(b) (i) Discuss the method of applying verification to a software life cycle. (8)

(ii) Explain the responsibilities and effectiveness of software verification. (8)

13. (a) (i) Identify various types of Adhoc testing and illustrate the process of each type of testing. (8)

(ii) Demonstrate category Paratition method for the below system.

Consider a method 'total – price' which takes 3 arguments item code, quantity and weight and returns total amount for the items purchased by the customer item code is of 5 digits and left most digit indicate the type of item.

Left most digit is 2 → health related items such as tables etc...

Left most digit is 4 → variable weight items such as fruits, vegetables etc. (8)

Or

(b) Prepare set of test cases for the following predicate using predicate based testing and prove that is BOR adequate.

Pr : $(a<b) \wedge !\subset \vee (d+1<e)$

Note that '$\vee$' operator takes priority over the '$\wedge$' operator. (16)

14. (a) *Draw the control flow graph and generate test cases for the following program.* (16)

```
int computer gcd (x,y)
int x,y ;
{
    While (x!=){
    if (x > y) then
    x = x – y ;
    else
    y = y – x ;
    }
    return x ;
    }
```

Or

(b) Design a set of test cases using CFG and DFG for the following program that selects largest of three numbers (16)

```
min ( )
{ float a, b, c ;
  Scanf (" % f % f, &a, &b, &c) ;
If (a > b)
  { If a > c print f (" %f " , a) ;
else
 Printf  (" % f \ n ", C)
  }
else If (C > b) printf (" % f " , C) ;
else
  Printf (" % f " , b) ;
}}
```

15. (a) How to prioritize a set of tests for regression testing? Explain the methodology for regression testing. (16)

Or

(b) Discuss about load, performance and usability test with suitable example. (16)
