SPRING END SEMESTER EXAMINATION-2014

6th Semester B.Tech/B.Tech Dual

SOFTWARE ENGINEERING IT-601

(Regular-2011 & Back-2010, 09 Admitted Batch)

Full Marks: 60 **Time: 3 Hours**

Answer any SIX questions including Question No.1 which is compulsory.
The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered at one place only.

1. a) What are the solutions to the software crisis? Explain. [2 × 10
   b) What is function point metric? What factors we consider for this metric?
   c) Differentiate between architectural design and detailed design.
   d) Explain the different categories of users who use SRS.
   e) What is 99% complete syndrome? Explain.
   f) Explain any two debugging approaches.
   g) Differentiate between code walk-through and code inspection.
   h) Why spiral model is known as Meta model?
   i) Differentiate between alpha and beta testing.
   j) What is the purpose of using UML class diagram? Give example with the help of a diagram.

2. a) Suggest a suitable life cycle model for software project which your organisation has undertaken on behalf of a certain customer whose requirements are not properly understood in the beginning and is rich with graphical user interface? Justify your answer and explain all phases of the proposed model in detail with schematic diagram. [2

b) Explain the types of activities carried out in maintenance. [2

3. a) What is LOC? How we estimate LOC of a software product? List three shortcomings of LOC. [5

b) List down at least six responsibilities of a software manager. [3

4. a) What do you mean by testing? Discuss about the following testing strategies for black box testing with suitable example. [1+2.5+2.5

(i) Equivalence class partitioning

(ii) Boundary value analysis

b) Suppose you are developing a software product in the organic mode. You have estimated the size of the product to be about 10,000 lines of code. Compute the nominal effort and the development time. [2

5. KIIT University is planning to develop a payroll software with the following activities. A list of employees with their basic pay is sent to a clerk. He calculates the gross pay using standard allowances which are known for each pay slab. Deduction statement such as loan repayment, subscription to association etc are also sent to another clerk to match these slips with the

slips of gross pay and calculate net pay. The slip is used by a third clerk to write out pay cheques for each employee and send to respective employees. The total pay bill paid is also computed.

a) Write all functional requirements from the above problems description in the form of SRS format. [2

b) Draw the context diagram and 1 level DFD. [4

c) Write the data dictionary. [2

6. What is cohesion and coupling? Discuss about various types of cohesion and coupling with suitable examples. [2+6

7. a) What are Driver and stub modules? In which testing are they used? Explain with neat diagram. [2+1+1

b) Draw the control flow graph and determine its cyclomatic complexity for the following code. [2+2

```
int find-maximum (int i, int j. Int k)
{
    int max;
    if (i>j) then
        if (i>k) then max=i;
            else max=k;
        else if (j>k) max-j
        else max=k;
        return (max);
}
```

8. Write short notes on the following: (Any two) [K 2

a) Use-case modelling

b) SEI CMM

c) Software Reverse Engineering

d) Requirements Engineering Tasks.

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