(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 110602

Roll No.

B. Tech.

(SEM. VI) THEORY EXAMINATION, 2014-15

SOFTWARE ENGINEERING

Time : 3 Hours] [Total Marks : 100

Note: Attempt all questions

Answer any four parts : (4×5=20)

(a) Define the term "Software engineering". Explain the major differences between software engineering and other traditional engineering disciplines.

(b) What is a flow chart? How is the flow charting techniques useful for software development?

(c) What is software metric? How is it different from software measurement?

(d) Explain why programs which are developed using evolutionary development are likely to be difficult to maintain?

(e) Explain software development life cycle. Discuss various activities during SDLC.

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(f) Define the following

(i) Water fall model

(ii) Spiral Model

Answer any four parts : (4×5=20)

(a) List five desirable characteristics of good SRS document. Discuss the relative advantages of formal and informal requirements specifications.

(b) Compare ISO and SEI-CMM model.

(c) Define the following terms: Objects, Message, Abstraction, Class, Inheritance and Polymorphism.

(d) Discuss the signification and use of requirement engineering. What are problems in formulation of requirement?

(e) What is meant by "Formal Technical Review"? Should it access both programming style as well as correctness of software? Give reasons.

(f) Define the decision table. Discuss the difference between decision table and decision tree.

Answer any two parts. (2×10=20)

(a) Define software architecture. Explain why it may be necessary to design the system architecture before the specifications written with example. Compare functional oriented and object oriented designs.

(b) What do you mean by the terms cohesion and coupling in the context of software design? How are these concepts useful in arriving at a good design of a system?

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(c) For the following `C' program estimate the Halstead's length and volume measures. Compare Halstead's length and volume measures of size with LOC measure.

```
//Program to calculate GCD of two numbers
    int compute-gcd(x,y)
    {
        int x,y;
        while(x!=y)
            if(x>y) then x=x-y;
            else y=y-x;
        return x;
    }
```

Answer any two parts : (2×10=20)

(a) Given software product and its requirement specification document, explain how would you design the system test suit for this software product?

(b) Short notes on :

i. Walkthrough

ii. code inspection technique

iii. Debugging.

(c) What is difference between coding standards and coding guidelines? Why are these considered important in software development organization? Write down five important coding standards and guidelines that you would recommend.

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Answer any two parts : (2×10=20)

(a) Using schematic diagram and suitable example show the order in which the following are estimated in the COCOMO estimation technique:

cost, effort, duration, size

(b) What do you mean by risk management? Explain how to select the best risk reduction technique when there are many ways of reducing a risk?

(c) Define the following:-

(i) Software Maintenance

(ii) Structure of CASE Tools.

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