



Printed Pages : 3

TCS – 404

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

PAPER ID : 1070

Roll No.

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B. Tech.

(SEM. IV) EXAMINATION, 2006-07

SOFTWARE ENGINEERING

Time : 3 Hours]

[Total Marks : 100

Note : Attempt all questions.

1 Answer any **four** parts : **4×5=20**

- (a) Define the term software. Describe its various characteristics.
- (b) What is a flow chart? How is the flow charting techniques useful for software development?
- (c) Define software crisis. What are possible solutions to the present software crisis?
- (d) Explain why programs which are developed using evolutionary development are likely to be difficult to maintain?
- (e) Define the following :
 - (i) Water fall model
 - (ii) Spiral model.
- (f) Explain software development life cycle. Discuss various activities during SDLC.

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2 Answer any **four** parts : **4×5=20**

- (a) Software requirement analysis is unquestionably the most communication – intensive step in the software engineering process. Why does the communication path frequently break down?
- (b) Describe five desirable characteristics of a good software requirement specification document.
- (c) Who should be involved in a requirement review? Draw a process model showing how a requirements review might be organized?
- (d) Compare ISO and SEI-CMM models.
- (e) Describe three principle activities involved in software quality management.
- (f) Draw the complete DFD at least up to 2-levels for a library management system.

3 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 function 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?
- (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-ged (x,y)  
    int x, y;  
    {  
        while (x != y)  
            if (x > y) then x = x-y;  
            else y = y-x;  
        return x;  
    }
```

4 Answer any **two** parts : **2×10=20**

- (a) Discuss the differences between black-box and structural testing and suggest how they can be used together in the defect testing process.
- (b) Show, using a small example, why it is practically impossible to exhaustively test a program.
- (c) (i) Distinguish between error and failure. Which of the two is detected by testing? Justify.
(ii) Explain formal technical reviews (Peer reviews).

5 Answer any **two** parts : **2×10=20**

- (a) Using a 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 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.