(2064)

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B. Tech 4th Semester Examination

Software Engineering (N.S.)

IT-224

Time : 3 Hours   **Max. Marks : 100**

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt five questions in all, selecting one question each from section A, B, C & D. Section E is compulsory.

SECTION - A

1. Define the term "Software engineering". Explain the major differences between software engineering and other traditional engineering disciplines.   (20)

2. Explain the Waterfall model with an example. Write at least two disadvantages of the Waterfall model when compared with the Prototyping model.   (20)

SECTION - B

3. Explain COCOMO model for software cost estimation. Suppose that we are faced with developing a system such that we expect to have about 1,00,000 LOC. Compute the effort and development time for the organic and semidetached development mode.   (20)

4   List five desirable characteristics of a good SRS document. Discuss the relative advantages of formal requirement specifications. List the important issues, which an SRS must address.   (20)

SECTION - C

5. Define module coupling and module cohesion and also explain different types of cohesion and coupling. (20)

6. Briefly discuss the following:

   (i) Test case design, Test & Test suite

   (ii) Verification & Validation

   (iii) Alpha, beta & acceptance testing (20)

SECTION - D

7. What are the appropriate reverse engineering tools? Discuss any two tools in detail. (20)

8. What is the need of Re-engineering? With the help of an example, explain the restructuring technique for re-engineering. How is reverse engineering different from re-engineering? (20)

SECTION - E

9. Answer short answer type questions:

   (a) Explain principles of data design.

   (b) How is software maturity index computed?

   (c) Explain the following terms:

      (a) abstraction (b) modularity.

   (d) What are the advantages of COCOMO-II over COCOMO model?

(e) How can metrics be helpful in software process improvement?

(f) Explain the concept of object oriented design in software engineering.

(g) What are process risks? Give 2 examples of process risk.

(h) What are the linkages between DFD and ER Diagrams?

(i) What are advantages of developing a prototype of a system?

(j) Write short note on configuration management.

(2×10=20)