[3863] – 150

T.E. (Computer Engineering) (Semester – II) Examination, 2010
SOFTWARE ENGINEERING
(2003 Course)

Time: 3 Hours Max. Marks: 100

Instructions : *1) Answer the questions -*

from Section 1 (Q.1 or Q.2) and (Q.3 or Q. 4) and (Q. 5 or Q.6) and

from Section 2 (Q.7 or Q. 8) and (Q.9 or Q.10) and (Q.11 or Q.12)

*2) **Neat** diagrams must be drawn **wherever** necessary.*

SECTION – I

1. a) Explain with neat diagram incremental model and state its advantages and disadvantages. **6**

   b) What is software process and what are the generic framework activities that are present in every software process ? **6**

   c) Write short note on : Unified Process. **5**

   OR

2. a) Why the software maturity framework was developed ? What is CMM ? Explain its level and state any two key process areas of each level. **9**

   b) Explain different types of softwae myths. **8**

3. a) Explain the importance of system modeling. Explain the factors that are considered to create system model. **6**

   b) Write short note on : System modeling using UML. **6**

   c) Explain business process engineering with suitable example. **5**

   OR

4. a) What are the core principles of software engineering practice ? **8**

   b) What are planning practices in software engineering ? Explain their principles. **9**

P.T.O.

5. a) Explain the steps required to initiate requirements engineering. 8

   b) Draw a use case diagram for 'Withdrawal of money from bank' operation. 8

OR

6. a) What is DFD ? Draw a level 0 and level 1 DFD for Railway Reservation System. 8

   b) What is Quality Function Deployment ? Explain the requirements identified by QFD. 8

SECTION – II

7. a) Explain in Domain Analysis, discuss in short: data objects, Cardinality and modality in data models. 9

   b) Describe and explain the importance of following architecture- 8
      i) Call-return architecture
      ii) Layered architecture.

OR

8. a) What is the relationship between modularity and functional independence ? Whether high cohesion and low coupling is practically achievable ? Justify your answer. 9

   b) What is meant by cohesion and coupling criteria's that address the function independence ? List all types of cohesion. 8

9. a) What categories of errors are traceable using Black-Box testing ? Explain in detail the following Black-Box testing methods 9
      i) Equivalence partitioning
      ii) Boundary value analysis
      iii) Orthogonal Array testing

   b) What are the unit testing considerations ? What is the difference beween test stub and driver ? What are the problems associated with Top-down integration ? 8

OR

10. a) Explain in detail basis path testing with following details- **8**
    i) Flow Graph notation
    ii) Cyclomatic complexity

    b) What are objectives of white-box testing ? Explain in detail the following White box testing techniques. **9**
    i) Data Flow Testing
    ii) Branch Testing.

11. a) Explain the difference between Measure and Metric. What are the attributes of effective software metric ? **8**

    b) What are measurement principles ? Explain in detail goal-oriented software measurement. **8**

OR

12. a) What is software quality ? Explain in detail **8**
    i) McCall's Quality factors
    ii) ISO 9126 Quality factors.

    b) List the metrics for analysis and design model. **8**
