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06IS51

**Fifth Semester B.E. Degree Examination, December 2012**  
**Software Engineering**

Time: 3 hrs.

Max. Marks:100

**Note: Answer FIVE full questions, selecting  
at least TWO questions from each part.**

**PART – A**

- 1 a. Explain the term software engineering. List and explain the key challenges that a software engineering is facing. (06 Marks)
- b. With a neat diagram, explain the system engineering process. (08 Marks)
- c. What are the professional responsibilities of a software engineer? (06 Marks)
- 2 a. What are critical systems? Explain different types of critical systems. (06 Marks)
- b. Explain Boehm's spiral model of software process with a neat diagram. (08 Marks)
- c. With a neat diagram, describe the component based software engineering. (06 Marks)
- 3 a. Differentiate between functional and non-functional requirements. Give examples for each. (05 Marks)
- b. List and explain the metrics used for specifying non-functional requirements. (06 Marks)
- c. Write a structure of requirement documents suggested by IEEE standards. (04 Marks)
- d. Explain the requirements engineering process with a neat diagram. (05 Marks)
- 4 a. Describe different types of system models. (05 Marks)
- b. Based on your experience with a bank ATM, draw a data flow diagram modeling the data processing involved when a customer withdraws cash from a machine. (08 Marks)
- c. State and explain different management activities. (07 Marks)

**PART – B**

- 5 a. Write short note on:
  - i) The repository model.
  - ii) The client server model.
  - iii) The layered model. (12 Marks)
- b. Explain object-oriented design process with example. (08 Marks)
- 6 a. Give brief descriptions of five principles of agile methods. (06 Marks)
- b. Explain re-engineering process with a neat diagram. (07 Marks)
- c. With a neat diagram describe the system evolution process. (07 Marks)
- 7 a. Explain the following:
  - i) Unit testing.
  - ii) Integration testing.
  - iii) Release testing. (09 Marks)
- b. Explain the clean-room software development process with a neat diagram. (07 Marks)
- c. Explain the stages involved in static analysis. (04 Marks)
- 8 a. Describe people's CMM levels. (05 Marks)
- b. Explain any two cost estimation techniques with example. (10 Marks)
- c. List and explain factors governing the staff selection. (05 Marks)

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Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.  
2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.