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10IS51

**Fifth Semester B.E. Degree Examination, Dec.2017/Jan.2018**  
**Software Engineering**

Time: 3 hrs.

Max. Marks:100

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

**PART – A**

- 1 a. Define Software Engineering. Distinguish between Generic product and Customised product. (06 Marks)  
b. What are the key challenges facing software engineering? (06 Marks)  
c. Define Legacy systems. Explain Legacy system components, with a neat sketch. (08 Marks)
- 2 a. Explain different types of Critical systems. Illustrate a simple safety critical system with insulin pump structure. (10 Marks)  
b. With a neat diagram, explain Boehm's Spiral Model of software process. (10 Marks)
- 3 a. Explain Rational Unified Process. (06 Marks)  
b. Illustrate with a sequence diagram, cash withdraw process from an ATM. (08 Marks)  
c. Give the structure of software requirements document in IEEE format. (06 Marks)
- 4 a. Describe Ethnography and Prototyping for requirement analysis. (06 Marks)  
b. With a neat sketch, explain State Machine model of a Microwave oven. (08 Marks)  
c. Explain with suitable example Risk Identification Process. (06 Marks)

**PART – B**

- 5 a. What are the advantages of Repository Model? Explain Client – Server model with diagram. (10 Marks)  
b. Define Object and Class with example. Explain the object oriented design process. (10 Marks)
- 6 a. Describe the basic principles of Agile development methods. (10 Marks)  
b. Define Program Evolution Dynamics. Explain Lehman's laws of software system growth and evolution. (10 Marks)
- 7 a. Explain : i) Verification ii) Validation iii) System testing iv) Test case design. (10 Marks)  
b. What are Formal methods? Explain their significance in software development process. (10 Marks)
- 8 Write short notes on the following :  
a. People Capability Maturity Model.  
b. Waterfall Model.  
c. Performance testing.  
d. Functional and Non – functional requirements. (20 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.