USN ☐☐☐☐☐☐☐☐☐☐   10IS51

Fifth Semester B.E. Degree Examination, June/July 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. Explain the different attributes of a good software.   **(06 Marks)**
   b. Mention the different stages involved in system engineering process. Explain any four phases.   **(10 Marks)**
   c. Explain any four emergent system properties.   **(04 Marks)**

2 a. Explain with a neat figure, a simple safety critical system.   **(06 Marks)**
   b. Explain with a figure, the waterfall model of software development process. **(10 Marks)**
   c. Explain the four principle dimensions of dependability.   **(04 Marks)**

3 a. Explain the terms:
      i)   Functional requirements   **(03 Marks)**
      ii) Non-functional requirements   **(04 Marks)**
      iii) User requirements   **(03 Marks)**
   b. Explain the requirement elicitation and analysis process.   **(05 Marks)**
   c. Explain the structure of a IEEE software requirement document.   **(05 Marks)**

4 a. What is a data flow model? Explain with a figure, the data flow model of an insulin pump.
                                                                              (10 Marks)
   b. Explain with a figure, the risk management process.   **(10 Marks)**

PART – B

5 a. Explain with a figure:
      i)   The repository model   **(05 Marks)**
      ii) The client-server model   **(05 Marks)**
   b. What are the stages involved in the object-oriented design process?   **(04 Marks)**
   c. Explain with a figure, the state diagram for weather station.   **(06 Marks)**

6 a. Explain the different principles of agile methods.   **(05 Marks)**
   b. List and explain the various tools included in rapid application development. **(05 Marks)**
   c. Explain with a figure, the different stages involved in system evolution process. **(10 Marks)**

7 a. What are the advantages of inspection over testing?   **(04 Marks)**
   b. Explain with a figure, the different stages involved in clean room development process.
                                                                              (10 Marks)
   c. Explain with a figure, the incremental integration testing.   **(06 Marks)**

8   Write short notes on the following:
   a. Critical factors in people management   **(05 Marks)**
   b. The people capability maturity model   **(05 Marks)**
   c. Cocomo model   **(05 Marks)**
   d. Factors affecting software pricing   **(05 Marks)**

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