Total No. of Questions : 8] *[Total No. of Printed Pages : 2*

Roll No .....

MSE-103

M.E./M.Tech., I Semester

Examination, December 2016

Software Engineering

Time : Three Hours

Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. a) Describe the requirements Engineering process. 7
   b) Who should be involved in a requirements review? Draw a process model showing how such a review might be organized? 7

2. a) Model the data processing which might take place in an electronic mail system that can send and receive messages from remote computers. You should model the mail-sending and mail-receiving processing separately. 7
   b) Write a set of non-functional requirements for the ticket issuing system described above, setting out its expected reliability and its response time. 7

3. a) Draw activities and class diagram for railway reservation system. 7
   b) What are the guidelines which should be followed when using colour in a user interface? Suggest how colour might be used to improve the interface of an application system which you use. 7

4. a) Using examples, describe how data flow diagrams may be used to document a system design. What are the advantages of using this type of design model? 7
   b) Explain Behavioral modeling with the help of example. 7

5. a) What is worst case testing? How is it different from boundary valve analysis? List the advantages of using this technique. 7
   b) Differentiate between black box and white box testing. Consider a program to find the largest number amongst three numbers. Generate test cases using one black box testing and one white box testing technique. 7

6. a) What types of Reviews are conducted throughout the software development life cycle? 7
   b) What is software metric? Why do we need metrics in software? Discuss the areas of applications and problems during implementation of metrics? 7

7. a) What is software reliability? Does it exist. Describe the following terms : 7
      i) MTBF
      ii) MTTF
      iii) Failure intensity
   b) Explain various levels of test process maturity model. 7

8. Write short note on : 14
   a) FURPS
   b) UML Scenario
   c) Architectural styles.

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