Second Semester M.TEch. Degree Examination, June/July 2011
Software Engineering

Time: 3 hrs.   Max. Marks:100

Note: *Answer any FIVE full questions.*

1 a. What are the key challenges facing in software engineering?   (06 Marks)
   b. Explain in detail, the computer based software engineering and also explain the different stages in a reuse oriented process.   (08 Marks)
   c. What is software specification? Explain main phases in the requirements engineering process.   (06 Marks)

2 a. Explain with a neat diagram, for a rapid application development environment and also describe the different tools that are included in RAD environment.   (08 Marks)
   b. Identify six possible risks that can arise when systems are constructured using COTS. What steps can a company take to reduce these risks?   (06 Marks)
   c. What are design patterns? Define the essential elements of design patterns.   (06 Marks)

3 a. Describe the basic elements of a component model, with a neat diagram. List the different services provided by a component model implementation.   (10 Marks)
   b. Explain the need of software maintenance and its types. Give the keyfactors that distinguish between development and maintenance.   (10 Marks)

4 a. Explain why the program inspections are an effective technicians for discovering errors in a program. What types of error are unlikely to be discovered through inspections? (08 Marks)
   b. Give the distinct types of testing that are used in software process. Explain the debugging process with a flow diagram.   (12 Marks)

5 a. What are the three principle types of critical system? Suggest six reasons, why dependability is important in critical system.   (10 Marks)
   b. Explain the concepts of reliability predicators and process assurances.   (10 Marks)

6 a. Explain the fault tree for the software related hazards in the insulin delivery system, with a neat flow diagram.   (06 Marks)
   b. Give the different types of measurement that can be made when assessing the reliability of system. Also explain different steps involved in establishing a reliability specification.   (06 Marks)
   c. List types of systems that would resource system software safety cases.   (08 Marks)

7 a. Explain the architecture of client server system.   (08 Marks)
   b. Write the CORBA.   (06 Marks)
   c. Explain the advantages and disadvantages of using a distributed approach to system development.   (06 Marks)

8 a. Describe the different components of a real time operating systems.   (06 Marks)
   b. Explain the scenario of generic 'C' architecture for a monitoring and control system with a diagram.   (06 Marks)
   c. Explain the role of monitoring and control system used in a real – time systems, with an example.   (08 Marks)

* * * * *