NOTE:

1. Answer question 1 and any FOUR from questions 2 to 7.
2. Parts of the same question should be answered together and in the same sequence.

Time: 3 Hours                                                  Total Marks: 100

1.  
   a) What is Quality in terms of software? List important attributes of Quality, which all software products should have. Explain each of them.
   b) Explain why it is necessary for a project manager to decompose the tasks of a project using Work Breakdown Structure (WBS)? To what granularity level are the tasks decomposed.
   c) List common types of Risk that typical Software project might suffer from. Briefly explain the Risk of schedule slippage for a medium size project.
   d) Explain the kind of team structure for small, medium and large software Projects.
   e) What is the difference between Version and Revision?
   f) What is Pareto analysis? When it is useful?
   g) What is the objective of the Project Planning Process? List various activities a software project manger performs in planning.

(7x4)

2.  
   a) Explain the special features of web-based software projects and embedded system projects. What are the quality issues which should be addressed in each case?
   b) Explain phases of Project Management Life cycle. How it is different from Software Development Life Cycle?
   c) What is the use of the following tools in Software Project Scheduling? Also, mention its significance:
      i) WBS
      ii) CPM
      iii) PERT charts

(7+5+6)

3.  
   a) Describe the role of project management plan.
   b) Compare ISO 9000 certification and SEI CMM. Is it possible for an organization to achieve a higher level of CMM without achieving a lower one?
   c) How can we estimate the cost of software? Explain COCOMO model.

(6+4+8)

4.  
   a) Describe the attributes of an Object Oriented software development Process. Can the Size estimation method described be of use for such systems?
   b) What are the types of risks that a project might suffer from? How would you identify the risks that a project is susceptible to during project planning stage?
   c) Project reviews and audits are important in project management. Discuss about their contribution in the success of the project? How do they contribute to the quality of a project?

(7+3+8)
5.  
   a) List and explain various phases of System Development Life Cycle.  
   b) What do you understand by Project Closure? How is Project Closure Analysis carried out? Discuss a strategy to automate such a process.  
   c) What is Software Reliability? How it is different from Hardware Reliability?  

6.  
   a) Explain embedded system with its advantages.  
   b) Discuss the role of metrics in the success of software project. How quality can be ensured using metrics?  
   c) Describe the role of function point analysis in project management. How can we calculate function points?  

7.  
   a) Suppose you are developing a software product in the organic mode. You have estimated the size of the product to be about 1,00,000 lines of code. Compute the nominal effort and development time.  
   b) Why is it important to track the progress of a project? Explain various monitoring and controlling techniques to track the project progress.  
   c) Define resource in Project Management. What types of resources are required to develop a software project? Explain the significance of resource allocation phase.