1. Answer the following questions. (Any five)   5 × 2
   a. Define software engineering.
   b. What is risk management?
   c. What is software metrics?
   d. Why do we go for requirement analysis?
   e. What is structural testing?
   f. What do you mean by staffing?
   g. Distinguish between DFD and Flowchart.
   h. Define data dictionary.

2.   6+6
   a. What do you understand by the term life cycle model of software development?
   b. What problem might a software development organization face if it does not follow any life cycle model s during development of a large software product?

3.   6+6
   a. Explain the SDLC of waterfall model and spiral model.
   b. Also discuss the specific advantages and disadvantages of these two process models.

4.   2 + 4 + 6
   a. What is SRS? Explain the component of SRS.
   b. Describe the various issues in functional and non-functional requirements.

5.   4 + 8
   a. "Modularity is a very important design principle of system development" what are the different steps to be followed to maintain the modularity of system.
   b. Explain the various types of cohesion and coupling with an example.

6.   8 + 4
   a. Explain the COCOMO cost estimation technique.
   b. Assume that the size of semi-detached software has 25000 lines of source code and average salary of software developer is 17000/month. Determine the effort, cost and time to develop the software.

7. A project schedule has the following characteristics   6+6

Activity	1-2	1-3	2-4	3-4	3-5	4-9	5-6	5-7	6-8	7-8	8-10	9-10
Time days	4	1	1	1	6	5	4	8	1	2	5	7

    a. Draw the activity network representation of the project.
    b. Calculate Critical Path and total duration of the project.

8.
                                                    6+6

    a. Explain the analysis and design of a Library information system with suitable UML diagram.
    b. Design the class diagram for ATM banking system.

                                                  2+4+6
9.
    a. What is the goal of testing? Explain about the functional and structural testing
    b. What is the difference between black-box testing and white-box testing?