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. 
   b) What is a project plan and what does it involve?
   c) Define risk analysis and risk monitoring? What are things to be considered in risk management?
   d) Define work breakdown structure (WBS). Give difference between conventional and evolutionary WBS. List issues related to conventional WBS.
   e) Explain forward looking approach for cost and schedule estimating process.
   f) Define contract management? What are the different types of contract?
   g) What is an organizational structure and list key element for proper organizational structure?

2. 
   a) Explain SLIM model of project estimation.
   b) Explain various types of risks involved in project management.
   c) Differentiate between Waterfall Model with prototype model.

3. Determine a) network diagram b) critical path c) ES, EF, LS and LF d) free slack for each activity for the project parameters given below:

<table>
<thead>
<tr>
<th>Task Number</th>
<th>Description</th>
<th>Duration (days)</th>
<th>Dependent on Tasks</th>
</tr>
</thead>
<tbody>
<tr>
<td>T1</td>
<td>Specification</td>
<td>15</td>
<td>--</td>
</tr>
<tr>
<td>T2</td>
<td>Design Database</td>
<td>45</td>
<td>T1</td>
</tr>
<tr>
<td>T3</td>
<td>Design GUI</td>
<td>30</td>
<td>T1</td>
</tr>
<tr>
<td>T4</td>
<td>Code database</td>
<td>105</td>
<td>T2</td>
</tr>
<tr>
<td>T5</td>
<td>Code GUI part</td>
<td>45</td>
<td>T3</td>
</tr>
<tr>
<td>T6</td>
<td>Integrate and Test</td>
<td>120</td>
<td>T4 and T5</td>
</tr>
<tr>
<td>T7</td>
<td>Write user manual</td>
<td>60</td>
<td>T1</td>
</tr>
</tbody>
</table>

4. 
   a) Explain EVS (Earned Value System).
   b) Differentiate between a) problem-based estimation and b) process-based estimation.

5. 
   a) Define software reliability. What is the difference between hardware & software reliability?
   b) What is CMM? Describe its levels & compare it with ISO 9001?
   c) Differentiate verification and validation in brief.

6. 
   a) Explain in brief Boehm’s staffing principles.
   b) Explain what is meant by stakeholder management. Also describe how project manager ensures stakeholder co-operation.
   c) Write short note on contract management.
7.
   a) Explain the basic fields of software change order with the help of a template of same.
   b) Explain the advantages of working as a team.
   c) Write a short note on SEI Capability Maturity Model (CMM). How does it differ from ISO9000? 
      (6+6+6)