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. Define the term Software Project Management. How development and management of software projects is different from other type of development projects?
   a) List and explain three feasibility tests in brief.
   b) What is cash flow forecasting? When is it done and why is it needed?
   c) What is PERT? For what purpose is it used? Explain in brief.
   d) Define acceptance testing and explain it in brief.
   e) Describe structured and unstructured decision making in brief.
   f) Explain different types of contracts in brief.

2. a) What are the problems with software projects? Explain any three problems with brief description of each.
   b) Provide an outline of step wise project planning activities.

3. a) Describe outline of COCOMO model. Consider a system for online auctions for various products. It is decided that the system will comprise some modules. The modules and their expected sizes are as follows.

<table>
<thead>
<tr>
<th>Module</th>
<th>LOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Login module</td>
<td>200</td>
</tr>
<tr>
<td>Payment module</td>
<td>200</td>
</tr>
<tr>
<td>Administrator interface module</td>
<td>600</td>
</tr>
<tr>
<td>Seller functions module</td>
<td>200</td>
</tr>
<tr>
<td>Buyer functions module</td>
<td>500</td>
</tr>
<tr>
<td>View and bookkeeping module</td>
<td>300</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2000</td>
</tr>
</tbody>
</table>

   The total size of this software is estimated to be 2K LOC as shown above. Consider all other factors have a nominal rating. Also consider standard values of constants a (3.9) and b (0.91). Find out effort based on these information.
   b) Explain how algorithm cost model can be used for estimating software cost?
   c) How to perform variation and risk analysis for a software project?

4. a) Explain notion of activity network by giving suitable example.
   b) What is earned value analysis? Explain in detail.
   c) What is the relationship between software configuration management and software maintenance?

5. a) What is return on investment? Define outline of return of investment? Calculate the return on investment (ROI) if average annual profit is Rs.10,000/- against the total investment of Rs. 1,00,000/-. 
   b) What is a role of a Software Project Manager? Explain the role of various charts used for software project management?
6. a) Explain risk mitigation, monitoring and management of risks while developing software.
b) What are different types of resources required for a project? Give the resource requirements project cycle and explain in brief.
c) Discuss in brief about software quality attributes/parameters.

(8+5+5)

7. a) What is meaning of Total Quality Management? What are advantages of TQM? Does ISO 9001 is aimed for TQM?
b) Describe the meaning of Software Configuration Management (SCM). Write the benefits and various functions of SCM.
c) Discuss agility and agile process.

(6+6+6)