**Software Engineering Chapter-wise Question Bank**

**Chapter 1: Introduction to Software Engineering**

**CO1: Student will be able to understand and use basic knowledge in software engineering.**

**Bloom’s Taxonomy Levels: L1 = Remembering, L2= Understanding**

1. What is software engineering? (R)
2. Describe the layered structure of software engineering. How quality of can be affected by wrong selection of process, method & tool? (U)
3. Define Software engineering and explain software process framework. (R)
4. Differentiate between prescriptive & evolutionary models. (U)
5. Explain SCRUM agile development model. (U)
6. Explain in detail Spiral model and compare it with component model. (U)
7. What are different levels of CMM? (R)
8. Compare Agile and traditional software development methods. (U)
9. Explain Waterfall model and give its advantages & disadvantages. (U)
10. List evolutionary models and explain any one in detail.
11. Explain software process framework. (U)
12. Explain Agility principles. Explain XP agile development process. (U)
13. What is the need of creating models? Explain modelling principles. (R)
14. What is Agility? How agile development help develop quality software? (R)
15. Explain Spiral model and how prototyping is used in Spiral model? (U)
16. Is Agile process suitable for large scale projects? Mention few issues. (U)

**Chapter2: Requirement Analysis**

**CO2: Student will be able to identify requirements, analyze and prepare models.**

**Bloom’s Taxonomy Levels: L1 = Remembering, L2= Understanding, L3 = Applying**

1. Discuss functional & non-functional requirements. (A)
2. List out the requirements elicitation techniques. Explain any two methods. (U)
3. How important is requirement analysis? Elaborate on different requirement engineering tasks. (A)
4. What are different requirement engineering tasks? Why identifying software requirements is difficult? (R)
5. Discuss different types of software requirements giving appropriate examples. (A)
6. Discuss different ways of writing a system requirements specification. (A)
7. Write a note on requirements elicitation and analysis. (R)
8. Develop SRS for University Management System. (A)
9. Prepare SRS for Course Management System. (A)
10. Prepare SRS for Railway Reservation System. (A)
11. Prepare SRS for Online Job Recruitment System. (A)

**Chapter3: Software Estimation and Scheduling**

**CO3: Student will be able to plan, schedule and track the progress of the projects.**

**Bloom’s Taxonomy Levels: L1 = Remembering, L2= Understanding, L3 = Applying**

1. What is process and project metrics? Explain 4 P’s of software engineering. (R)
2. What is cost estimation? Explain LOC method. (R)
3. Elaborate COCOMO method of cost estimation. (U)
4. Differentiate between FP based and LOC based cost estimation techniques. (A)
5. List down the activities required for scheduling and tracking software projects. (R)
6. Examine different metrics for size estimation with their advantages and disadvantages. (A)
7. Write a note on Process & Project Metrics. (U)
8. Explain how size oriented metrics differs from functional oriented metrics. (U)
9. What is metric? Explain process & project metrics. (U)
10. Compare PERT & CPM. (A)
11. Discuss the different types of cost estimation model. (A)
12. Explain empirical estimation mode. (U)
13. Discuss Earn Value Analysis in project tracking. (A)
14. Discuss the importance of WBS in software engineering with suitable example. (A)

**Chapter 4: Design Engineering**

**CO4: Student will be able to design & develop the software solutions for the growth of society.**

**Bloom’s Taxonomy Levels: L1 = Remembering, L2= Understanding, L3= Applying**

1. Write a note on – Design concepts and principles. (U)
2. Write a short note on architectural styles. (U)
3. What is coupling and cohesion? What should good design contain? (R)
4. Explain architectural design for E-commerce system. (A)
5. Explain following design concepts: Abstraction, Modularity (U)
6. Explain Refinement, Refactoring, and design classes. (U)
7. Explain coupling and cohesion. What is preferred in the component? Why? (A)
8. Describe quality guidelines & quality attributes of software design. (A)
9. Describe the golden rules of user interface design. (U)
10. Describe component-level design principles. (U)

**Chapter 5: Software Risk, Configuration Management**

**CO5: Student will be able to demonstrate and evaluate real time projects with respect to software engineering principles.**

**Bloom’s Taxonomy Levels: L1 = Remembering, L2= Understanding, L3= Applying, L4 = Analyzing**

1. Explain risk analysis and management in detail. (U)
2. How risk projection is carried out? (R)
3. What are risks associated with delayed projects? How do project managers manage such risk? (A)
4. Write short note on: RMMM plan. (U)
5. What is quality assurance? Explain the levels of quality assurance? (U)
6. Give template for SQA plan. (U)
7. Explain change management process. (U)
8. What do you understand by process maturity? (R)
9. Mention SQA activities. (U)
10. Write short note on FTR. (U)
11. Define software configuration management. How are change control and version control carried out? (U)
12. What are various version control activities? (U)
13. State five major tasks on SCM. (U)
14. Describe the activities done during FTR, configuration audit and status reporting. (A)
15. Explain software quality attributes. (U)
16. Mention reasons for project delay. What are the risks associated with project delay? Perform risk assessment and prepare RMMM plan for the same. (L4-A)
17. What is the need of SCM in software engineering? Explain SCM process. (U)
18. What are the risks associated with software projects? How do project managers manage such risks? Discuss with appropriate examples. (L4-A)
19. What are the different probable origins of changes that are requested for software? (A)
20. Prepare a sample risk table and explain RMMM for the same. (L4-A)
21. List any five configuration items produced during SDLC. Explain change control process. (U)

**Chapter 6: Software Testing and Maintenance**

**CO6: Student will be able to apply testing and assure quality in software solution.**

**Bloom’s Taxonomy Levels: L1 = Remembering, L2= Understanding, L3= Applying, , L4 = Analyzing**

1. What are different testing types? (R)
2. What is testing? What is the role of testing in software engineering? (R)
3. What are the testing strategies? (R)
4. What is maintenance? Explain different types of maintenance with appropriate examples. (A)
5. Differentiate between Alpha & Beta testing, Verification & Validation with appropriate examples. (L4-A)
6. Explain the need for system testing. (U)
7. What are the different categories of testing under strategy for testing conventional software? Explain all in detail. (A)
8. Write a note of software re-engineering. (U)
9. Difference between Forward Engineering and Reverse Engineering. (L4-A)
10. Describe the test strategies for Object-Oriented Software. (U)