Unit-1:

Short

1. Explain about software engineering layered technology
2. Define Software Engineering?
3. List the stages of processing models.
4. Outline the diagram of requirement change management
5. List the software requirements.
6. Draw the diagram of different non-functional requirements.
7. Outline the feasibility study.
8. Define Functional and Non-Functional Requirements.

Long

1. a) Compare the Waterfall & Incremental models with a neat diagram.

   b) Explain the requirement engineering process with a neat diagram and explain in detail about Requirement Validation.
2. a) Analyze the CMMI levels in detail.

   b) Compare Functional and Non-Functional Requirements.
3. a) Analyze "Spiral process Model" with neat diagram along with advantages and disadvantages.

   b) Explain in detail about the "System Requirements Specifications" (SRS Document).
4. a) Discuss prototype process model with a neat sketch.

   b) Draw the diagram of Requirement Engineering Process & Explain in detail about Requirement Elicitation and Requirement Analysis.
5. a) Describe the concurrent Model with neat diagram.

   b) Discuss in detail about Requirement Validation.

   c) Discuss User requirements
6. a) Interpret the evolving role of software.

   b) Describe System requirements.
7. a) Interpret the work products of inception and elaboration of phases of unified process and draw the diagram of Unified Process.

   b) In detail explain the requirements management.
8. Discuss the construction and transition phases of unified process.

9. Write about process assessment.

Unit-2:

Short

1. Name elements of design model?
2. Why software architecture is so important?
3. List the quality attributes.
4. Give the importance of architecture
5. Explain functional dependency of design concepts.
6. Define component.
7. Give the difference between architectures and patterns.
8. Name the "Golden Rules" of designing.
9. List the component level design guidelines.

Long

10. a) Summarize types of cohesions.
    b) Illustrate different types of "Architectural Styles" with neat diagrams.
11. a) Outline the architecture of representing the system in context.
    b) Define design process. Explain the design characteristics.
12. a) Explain the following Design Concepts:
    (I) Abstraction, (II) Modularity, (III) Design classes
    b) Discuss about process in "User Interface Analysis & Design".
13. a) Illustrate about the Architectural Design.
    b) Discuss interface, dependency and inheritance of component level design guide lines.
14. Explain the following couplings with suitable examples.
    (I) content coupling (II) Common coupling (III) Control coupling (IV) Stamp coupling
15. a) Illustrate the quality design concepts.
    b) Describe principles of the "Golden Rules".
16. a) Discuss the design model with neat graph.
    b) Explain in detail about model in "User Interface Analysis & Design".
17. a) Describe the data design.
    b) Summarize the design concepts
    (I) Architecture, (II) Pattern, (III) Information hiding, (IV) Refactoring
18. a) Interpret the architectural patterns.
    b) Compare cohesion and coupling.
19. Explain the following couplings with suitable examples.
    (I) Data coupling (II) Routine call coupling (III) Type coupling (IV) Inclusion or Import coupling (V) External coupling.

Unit-3:

Short

1. Give the importance of UML.
2. List the basic elements of UML.
3. Name the building blocks of UML.
4. What is thing?
5. Define class and object.
6. List the different types of actors.
7. Differentiate action and activity states.

Long

8. a) Explain the principles of UML
   b) Model the activity diagram with suitable examples and explain its contents.
9. a) Discuss the structural things of UML.
   b) Describe state chart diagram with suitable examples
10. a) Summarize the graphical notations for the following:
    (I) Behavioral things (II) Annotation things
    b) Model the use-case diagram for cellular telephone and its common modeling techniques.
11. a) Discuss relationships with its graphical notations.
    b) Develop a sequence diagram for cellular network and explain its contents.
12. a) Explain diagrams in UML.
    b) Develop and define collaboration diagrams with suitable examples
13. a) Describe the rules of the UML.
    b) Discuss component diagram with its common modeling techniques.
14. a) Explain the common mechanisms in UML.
    b) Model a deployment diagram with its common modeling techniques.
15. a) Develop the class diagram for company management system. Define aggregation relationships.
    b) Compare sequence and collaboration diagrams.
16. a) Discuss the common modeling techniques of class diagram.
    b) Explain the different transitions of activity diagram with its notations.
17. a) Explain object diagram with suitable examples.
    b) Compare static and dynamic diagrams.

Unit –IV

Short

1. Write a short note on black box testing?
2. Distinguish between verification and validation?
3. Draw the diagram of debugging process?
4. Write about drivers and stubs?
5. Explain about alpha and beta testing?
6. List the metrics for Design model?
7. What is unit testing?
8. Explain about software testing.
9. What is Software Quality?

Long

1. a) Explain the Metrics for Source Code and Metrics for Maintenance?
   b) What is Software Testing? Explain clearly the System Testing?
2. a) Differentiate between Top-down integration and Bottom-up integration?
   b) Explain in detail the Metrics used for Testing?
3. a) Discuss in detail the Art of Debugging with neat diagram?
   b) Explain in detail the concept of Unit testing with examples?
4. a) Explain clearly about techniques used for Integration testing with examples?
   b) Why we need Validation testing? Explain types of approaches used for validation testing?
5. a) Explain the following terms with examples
   i)Graph-based testing methods ii) Boundary Value Analysis
   b) Write a short note on Regression testing and Smoke testing?
6. a) Discuss about Cyclomatic complexity of white box testing with examples?
   b) Explain the following terms with examples
      i) Method Inheritance Factor ii) Coupling Factor
7. a) State the concept of Component Level Design Metrics with examples?
   b) Explain in detail about a strategic approach to Software Testing?
8. a) Explain the factors used for Software Quality?
   b) Give a detail note on Architectural Design Metrics?
9. a) Explain about Metrics used for the Analysis Model with an example?
   b) Illustrate the concept of Defect Removal Efficiency?
   10. Explain about the Metrics used for Software Quality?

Unit-V

Short

1. Differentiate between reactive risk and proactive risk strategies.
2. What is software reliability and how this parameter helps in managing software quality?
3. Define Quality management. What are the types of Quality management?
4. What is the importance of software reviews?
5. Write a short note on Risk Projection?
6. List out three core steps of six sigma methodology?
7. Predict why we require Formal Technical Reviews?
8. State the two characteristics of software risks?
9. Discuss about internal failure costs and external failure costs?
10. Draw the diagram of Risk management concern?

Long

1.a) Explain in detail the techniques used for Risk Projection?
b) Illustrate the concept of RMMM Plan?
2. Define Software risk? Explain different categories of software risks?
3.a) Summarize the concept of Risk Refinement with example?
b) Describe the checklist used for Risk Identification?
4.a) Explain the following terms with examples a) Quality b) Quality Assurance?
b) Explain the activities of software quality assurance group to assist the software team in achieving high quality?
5. Explain in detail about Review meeting and Review Guidelines with examples?
6.a) Write a detailed note on ISO 9000 quality standards?
b) Summarize the concept of Software Reliability?
7.a) Explain the following terms with examples
i) Review Reporting and Review recording ii) Sample Driven Reviews
b) Define Software Quality? How the cost of Quality is measured?
8.a) Why the Six Sigma strategy is needed in statistical quality assurance? Explain it.
b) What types of risks occur during software development? Discuss.?
9. a) What is the significance of Formal Technical Reviews? Explain
b) Give an example how a software team defines a project risk?
10. a) Summarize the concept of Risk Mitigation, Monitoring and Management?
b) Illustrate the concept of Software Quality Assurance?