KTU NOTES

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KTU STUDY MATERIALS | SYLLABUS | LIVE NOTIFICATIONS | SOLVED QUESTION PAPERS

MODULE 1

1. Outline the advantages of incremental development model over Waterfall model.
2. Differentiate plan-driven and agile software development approach.
3. Why professional software that is developed for a customer is not simply the programs that have been developed and delivered.
4. Incremental software development could be very effectively used for customers who do not have a clear idea about the systems needed for their operations. Justify
5. Explain the major phases in waterfall model of software development. Which phase consumes the maximum effort for developing a typical software product?
6. You are given a project which involves many risks, that are difficult to anticipate at the start of the project. Which life cycle model is best suited for the project? Justify your answer. Explain that model in detail.
7. Explain different process activities
8. Explain Agile Development techniques and Agile Project Management.
9. Compare waterfall model and spiral model
10. Explain Agile ceremonies and Agile manifesto

MODULE 2

1. Summarize the structure of a Software Requirement Specification (SRS) document.
2. Explain Personas, Scenarios, User stories and Feature identification
3. Identify any four types of requirements that may be defined for a software system
4. Describe software architecture
5. What is the relevance of the SRS specification in software development?
6. Prepare a use case diagram for a library management system
7. Illustrate Requirement elicitation and analysis process with the help of a diagram.
8. Why is requirements elicitation considered as a critical task in requirements engineering? Explain any two methods for requirements elicitation.
9. Briefly explain design concepts in Software Engineering.
10. Explain different architectural styles used in Software design.
11. What are functional and nonfunctional requirements? Imagine that you are developing a library management software for your college, list eight functional requirements and four nonfunctional requirements.
12. List the components of a software requirement specification (SRS)?
13. Compare Software Architecture design and Component level design

MODULE 3

1. Define any four types of system testing.
2. Identify the types of maintenance that a software product might need. Explain
3. Differentiate between GPL and LGPL?
4. How do design patterns help software architects communicate the design of a complex system effectively
5. Compare white box testing and black box testing.
6. Compare any two types of Black box testing strategies citing examples.
7. Explain basis path White box testing strategy with an example.
8. Discuss the Formal Technical Review (FTR) process performed by Software Engineers.
9. Describe Continuous Integration, Delivery and Deployment (CI/CD/CD) in DevOps Automation
10. Justify the need for DevOps practices?
11. Explain software testing strategies.
12. Describe the formal and informal review techniques.
13. Explain test driven development

MODULE 4

1. What is risk? Explain different types of software risk.
2. List out the factors that affect software pricing.
3. List out and explain fundamental project management activities.
4. Discuss Risk management process in detail with a diagram.
5. Specify the importance of risk management in software project management?
6. Describe COCOMO cost estimation model
7. Define software configuration management.
8. Explain different activities involved in configuration management.
9. Summarize Software Project planning process.
10. What is a critical path and demonstrate its significance in a project schedule with the help of a sample project schedule.
11. Explain plan driven development and project scheduling.
12. Illustrate the activities involved in software project management for a socially relevant problem?
13. How do SCRUM, Kanban and Lean methodologies help software project management?
14. Is rolling level planning in software project management beneficial? Justify your answer.
15. How would you assess the risks in your software development project? Explain how you can manage identified risks?

16. What is algorithmic cost modeling? What problems does it suffer from when compared with other approaches to cost estimation?

MODULE 5

1. Outline the elements of Software Quality Assurance.
2. Describe different levels of the CMMI model.
3. Discuss the software quality dilemma
4. List out the metrics that are used to measure software quality. Justify how these metrics interpret the quality of the Software.
5. Explain why micro services should have low coupling and high cohesion.
6. Describe Software Process Improvement process.
7. Outline the elements of a SPI framework
8. Explain elements of Software Quality Assurance and SQA Tasks.
9. Illustrate SPI process with an example.
10. Compare CMMI and ISO 9001:2000.
11. How can Software projects benefit from Container deployment and Micro service deployment?
12. Justify the importance of Software Process improvement?
13. Explain the benefits of cloud based software development, containers and microservices.
14. Give the role of retrospectives in improving the software development process.
15. Illustrate the use of project history data as a prediction tool to plan future socially relevant projects