



NARASIMHA REDDY ENGINEERING COLLEGE

(Autonomous)

Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad

Accredited by NAAC with A Grade, Accredited by NBA

COMPUTER SCIENCE ENGINEERING

QUESTION BANK

Course Title : SOFTWARE ENGINEERING

Course Code : CS3102PC

Regulation : NR20

Course Objectives:

1. To help the student differentiate between the programming approach and the software engineering approach and introduce the issues while building large programs.
2. To introduce basic concepts of software engineering through – project, product, process models, personal software process, team software process, umbrella activities.
3. To elaborate techniques and processes for software requirements, design methodologies, coding and testing methodologies, software metrics and quality.
4. To make the students understand how the applications of software engineering principles would improve the quality of software and decrease the cost of software development and maintenance

Course Outcomes (CO's):

CO 1	Understand underlying principles of software engineering, software myths and Software Process models.
CO 2	Understand requirements engineering process and related system models.
CO 3	Understand software design process, design quality, design models and create architectural designs, component designs and UI designs.
CO 4	Develop a strategic approach to testing and use debugging Techniques
CO 5	Analyze the importance of software metrics and apply risk management strategies.

UNIT-I
ENGINEERING

S.No	Questions	BT	CO	PO
Part – A (Short Answer Questions)				
1	What is Software Development Life Cycle.	L1	CO1	PO1
2	Distinguish between software process and project.	L4	CO1	PO1
3	List the task regions in the spiral model	L1	CO1	PO2
4	What is Software and Software Engineering.	L1	CO1	PO2
5	Discuss about changing nature of software.	L1	CO1	PO1
6	Software Engineering a layered Technology.	L1	CO1	PO1
7	What are the advantages of Unified process.	L1	CO1	PO1
8	Explain various software myths.	L1	CO1	PO1
9	What are the merits of Incremental model.	L1	CO1	PO1
10	What are advantages of evolutionary process models.	L3	CO1	PO2
Part – B (Long Answer Questions)				
11	a) Explain CMMI model with a neat sketch	L1	CO1	PO1
	b) Discuss in brief about the Water fall model.	L1	CO1	PO1
12	a) What are the five generic process framework activities? Explain.	L1	CO1	PO1
	b) Give an overview of unified process model.	L1	CO1	PO1
13	a) State and explain various software myths.	L1	CO1	PO1
	b) What are the merits of incremental model.	L1	CO1	PO2
14	a) Explain CMMI model with a neat sketch.	L1	CO1	PO1
	b) Write the process assessment.	L2	CO1	PO1
15	a) What is legacy software? Explain briefly its impact in software engineering.	L3	CO1	PO2
	b) Explain the following: Spiral Model.	L1	CO1	PO2
16	a) Discuss about the changing nature of software.	L1	CO1	PO1
	b) Software Engineering a layered Technology.	L1	CO1	PO1

UNIT-II
REQUIREMENTS

S.No	Questions	BT	CO	PO
Part – A (Short Answer Questions)				
1	What is meant by system requirements.	L4	CO2	PO2
2	What are the differences between functional requirements and non-functional requirements.	L3	CO2	PO2
3	Explain about context models	L3	CO2	PO2
4	What models is feasibility study?	L1	CO2	PO1

5	What are the non-functional requirements.	L1	CO2	PO1	
6	What are the characteristics of good SRS document.	L1	CO2	PO1	
7	What is meant by Requirement management.	L1	CO2	PO1	
8	Explain about behavioral models	L1	CO2	PO2	
9	Explain about data models	L1	CO2	PO1	
10	Explain about object models	L1	CO2	PO1	
Part – B (Long Answer Questions)					
11	a)	Discuss in detail about system requirements.	L1	CO2	PO1
	b)	List and explain the data model in brief.	L1	CO2	PO1
12	a)	Explain how a software requirements document is structure.	L1	CO2	PO1
	b)	Give a brief summary on requirements elicitation and analysis phases of Requirements engineering process	L2	CO2	PO2
13	a)	Explain clearly about software requirements document	L1	CO2	PO1
	b)	State and explain various aspects in requirements validation process.	L1	CO2	PO1
14	a)	Describe five desirable characteristics of a good software requirement specification document.	L1	CO2	PO1
	b)	Give an overview of various system models.	L1	CO2	PO1
15	a)	Explain how a software requirements document is structure	L1	CO2	PO1
	b)	Write the System models: i). context model ii). Behavioral model	L1	CO2	PO1
16	a)	Explain clearly about software requirements document	L1	CO2	PO1
	b)	Write the System models: i). Data model ii). Object model	L3	CO2	PO1

UNIT-III
DESIGN

S.No	Questions	BT	CO	PO	
Part – A (Short Answer Questions)					
1	Write brief notes on data design.	L1	CO3	PO1	
2	Name the commonly used architectural styles	L1	CO3	PO1	
3	Write about interface design evaluation	L1	CO3	PO1	
4	List the guidelines for data design.	L2	CO3	PO2	
5	Define design process.	L1	CO3	PO1	
6	List the principles of software design.	L1	CO3	PO1	
7	List the guide lines for data design.	L1	CO3	PO1	
8	Name the commonly used architectural styles.	L1	CO3	PO1	
9	What are the goals of the design process.	L1	CO3	PO1	
10	Define software architecture.	L1	CO3	PO1	
Part – B (Long Answer Questions)					
11	a)	Describe architectural architecture styles and patterns.	L1	CO3	PO1
	b)	Draw and explain sequence diagrams with an example.	L1	CO3	PO1
12	a)	Write a short note on data design.	L1	CO3	PO1
	b)	Explain the following diagrams. i). Class diagrams ii) Sequence diagrams.	L3	CO3	PO2
13	a)	Discuss about mapping dataflow into software architecture.	L1	CO3	PO1
	b)	Explain about conducting component level design.	L1	CO3	PO1

14	a)	Define Software architecture. Explain why it may be necessary to design the system architecture before the specifications. Compare function oriented and object oriented designs	L1	CO3	PO1
	b)	Explain the following diagrams. i). Collaboration diagrams ii) Use case diagrams	L3	CO3	PO1
15	a)	Describe architectural architecture styles and patterns	L1	CO3	PO2
	b)	Write a short note on data design.	L3	CO3	PO1
16	a)	Explain the following diagrams. i). Class diagrams ii) Sequence diagrams.	L1	CO3	PO1
	b)	Explain the following diagrams. i). Collaboration diagrams ii) Use case diagrams	L1	CO3	PO1

UNIT-IV

TESTING

S.No	Questions		BT	CO	PO
Part – A (Short Answer Questions)					
1		What is meant by debugging.	L1	CO4	PO1
2		Write a short note on black box testing.	L1	CO4	PO1
3		What do you mean by software design quality? Explain.	L1	CO4	PO1
4		Define black box testing strategy.	L1	CO4	PO2
5		List the metrics for design model.	L1	CO4	PO1
6		Define Testing.	L1	CO4	PO1
7		List the metrics for source code.	L3	CO4	PO2
8		What is regression testing.	L1	CO4	PO2
9		Differentiate between black-box and white-box testing.	L3	CO4	PO1
10		Explain clearly about metrics for software quality	L1	CO4	PO1
Part – B (Long Answer Questions)					
11	a)	Describe Strategic approach to software testing.	L1	CO4	PO1
	b)	Differentiate between black-box and white-box testing.		CO4	PO2
12	a)	Explain software quality and metrics for analysis model.	L3	CO4	PO2
	b)	What is black box testing Explain.	L1	CO4	PO2
13	a)	Discuss about metrics for design model and source code	L2	CO4	PO2
	b)	Explain clearly about metrics for software quality	L3	CO4	PO1
14	a)	Distinguish between error and failure. Which of the two is detected by testing?Justify	L1	CO4	PO1
	b)	Explain how black box testing differs from white box testing.	L1	CO4	PO1
15	a)	What are the metrics used for testing ? Discuss.	L1	CO4	PO1
	b)	Differentiate between black-box and white-box testing.	L3	CO4	PO1
16	a)	Describe Strategic approach to software testing.	L1	CO4	PO1
	b)	Explain software quality and metrics for analysis model	L1	CO4	PO1

UNIT-V
MANAGEMENT

S.No	Questions	BT	CO	PO
Part – A (Short Answer Questions)				
1	What is meant by software measurement.	L1	CO5	PO1
2	Discuss the reactive risk strategy.	L1	CO5	PO1
3	What is meant by software reliability?	L1	CO5	PO1
4	Differentiate between reactive risk and proactive risk strategies.	L2	CO5	PO1
5	What is software reliability and how this parameter helps in managing software quality?		CO5	PO1
6	Write short notes RMMM.	L1	CO5	PO1
7	Write short notes RMMM Plan.	L2	CO5	PO1
8	Define Risk Refinement.	L2	CO5	PO1
9	List the metrics for Design model.	L4	CO5	PO1
10	Give the different categories of risks.	L1	CO5	PO1
Part – B (Long Answer Questions)				
11	a) Write a detailed note on ISO 9000 quality standards	L1	CO5	PO2
	b) RMMM Write short notes.	L1	CO5	PO1
12	a) Discuss about various metrics for software quality.	L1	CO5	PO1
	b) Various metrics for process and products	L2	CO5	PO1
13	a) Explain about formal technical reviews	L2	CO5	PO1
	b) Explain about risk projection and risk management	L1	CO5	PO2
14	a) What do you mean by risk management? Explain how to select the best risk reduction technique when there are many ways of reducing a risk?	L1	CO5	PO2
	b) What types of risks occur during software development? Discuss.	L3	CO5	PO1
15	a) Discuss about various metrics for software quality.	L2	CO5	PO2
	b) Explain about formal technical reviews	L1	CO5	PO1
16	a) Explain the use of Software Reviews	L3	CO5	PO1
	b) Describe the methods for Risk Projection.	L2	CO5	PO1

* **Blooms Taxonomy Level (BT)**(L1 – Remembering; L2 – Understanding; L3 – Applying; L4 – Analyzing; L5 – Evaluating; L6 – Creating)

Course Outcomes (CO)

Program Outcomes (PO)

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