GEETHANJALIINSTITUTEOFSCIENCE&TECHNOLOGY
(ANAUTONOMOUS INSTITUTION)
(Approved by AICTE, New Delhi & Affiliated to JNTUA, Ananthapuramu)
(Accredited by NAAC with "A" Grade, NBA(EEE,ECE&ME)&ISO9001:2008 Certified Institution)

QUESTION BANK (DESCRIPTIVE)

Subject Name: Software Engineering

Subject Code: 23A3207T

Course & Branch : B.Tech & CSE(DS)

Year & Semester: III B.Tech I Semester   Regulation: RG23

Unit-1

S.No	2 Marks Questions (Short)	[BT Level][CO][Marks]
1	Define software engineering and mention its importance	L1, CO1, 2 M
2	What is abstraction in software engineering?	L1, CO1, 2 M
3	Define decomposition and give an example	L1, CO1, 2 M
4	List any four SDLC models.	L1, CO1, 2 M
5	Mention two advantages of the iterative waterfall model.	L1, CO1, 2 M
6	What is RAD model in software development?	L1, CO1, 2 M
7	Define project planning in software project management.	L1, CO1, 2 M
8	What is Halstead's Software Science used for?	L1, CO1, 2 M
9	What is risk management in software projects?.	L1, CO1, 2 M
10	What is configuration management?	L1, CO1, 2 M

S.No	Descriptive Questions (Long)		[BT Level] [CO][Marks]
1	(a)	Explain abstraction vs decomposition with examples.	L2, CO1, 6M
	(b)	Discuss the evolution of software engineering techniques	L2, CO1, 6M
2	(a)	Describe the phases of SDLC with neat diagrams.	L2, CO1, 6M
	(b)	Explain the iterative waterfall model and its merits/demerits.	L2, CO1, 6M
3	Compare prototype, evolutionary, and spiral models.		L2, CO1, 12M
4	(a)	Explain RAD model and its applications.	L2, CO1, 6M
	(b)	Discuss agile models and their significance in modern development.	L2, CO1, 6M

5	Explain project estimation techniques like COCOMO and Halstead's metrics.	L3, CO1, 12M
6	Describe project scheduling and staffing in software project management.	L2, CO1, 12M
7	(a) Explain various team structures used in software projects.	L2, CO1, 6M
	(b) Discuss the importance of organization in project planning.	L2, CO1, 6M
8	What are the major risk management strategies? Explain with examples.	L2, CO1, 12M
9	Describe configuration management process and tools with examples.	L2, CO1, 12M
10	Discuss software project management activities in detail.	L2, CO1, 12M

UNIT-2

S.No	2 Marks Questions (Short)	[BT Level][CO][Marks]
1	What are software myths?	L1, CO1, 2 M
2	Define SRS (Software Requirement Specification).	L1, CO1, 2 M
3	What is traceability in requirements?	L1, CO1, 2 M
4	Mention two characteristics of a good SRS document	L1, CO1, 2 M
5	What are decision tables used for?	L1, CO1, 2 M
6	Define axiomatic specification.	L1, CO1, 2 M
7	What is algebraic specification in SE?	L1, CO1, 2 M
8	Define functional and non-functional requirements.	L1, CO1, 2 M
9	What are formal system development techniques?	L1, CO1, 2 M
10	What are the IEEE 830 guidelines?	L1, CO1, 2 M

S.No	Descriptive Questions (Long)	[BT Level] [CO][Marks]
1	Explain the unique nature of WebApps and its impact on requirements gathering.	L2, CO2, 12M
2	(a) Describe requirement analysis activities.	L2, CO2, 6M

	(b)	Explain requirement elicitation techniques.	L2, CO2, 6M
3	(a)	Discuss the structure and contents of a good SRS document.	L2, CO2, 6M
	(b)	Explain IEEE 830 guidelines for SRS preparation.	L2, CO2, 6M
4		Describe decision tables and decision trees with examples.	L3, CO2, 12M
5		Explain traceability and its significance in requirements engineering.	L2, CO2, 12M
6		What are software myths? Explain how they affect software development	L2, CO2, 12M
7		Explain axiomatic and algebraic specification with suitable examples.	L3, CO2, 12M
8	(a)	Compare functional vs non-functional requirements.	L2, CO2, 6M
	(b)	Explain formal system development techniques.	L2, CO2, 6M
9		Describe requirement gathering and analysis process in detail.	L2, CO2, 12M
10		Explain common problems in requirements specification and how to overcome them.	L2, CO2, 12M

Unit-3

S.No	2 Marks Questions (Short)	[BT Level][CO][Marks]
1	Define cohesion in software design.	L1, CO3, 2M
2	Define coupling in software design.	L1, CO3, 2M
3	What is control abstraction?	L1, CO3, 2M
4	What is fan-in and fan-out in design?	L1, CO3, 2M
5	Define layered design.	L1, CO3, 2M
6	What are the advantages of object-oriented design?	L1, CO3, 2M
7	What is UML?	L1, CO3, 2M
8	What is a DFD?	L1, CO3, 2M
9	Mention two characteristics of a good user interface.	L1, CO3, 2M
10	What is mode-based interface?	L1, CO3, 2M

S.No	Descriptive Questions (Long)	[BT Level] [CO][Marks]
1	Compare object-oriented and function-oriented design approaches.	L3, CO3, 12M
2	Explain various types of cohesion and coupling with examples.	L2, CO3, 12M
3	Explain SA/SD methodology and its steps.	L2, CO3, 12M
4	(a) Explain data flow diagrams and their levels. (b) Extend DFD technique to real-life system design.	L2, CO3, 6M L2, CO3, 6M
5	Describe control hierarchy concepts: layering, control abstraction, depth & width	L2, CO3, 12M
6	Explain detailed design and design review process.	L2, CO3, 12M
7	Discuss GUI design methodology and its phases.	L2, CO3, 12M
8	Explain types of user interfaces and their characteristics.	L2, CO3, 12M
9	(a) Explain UML diagrams used in object-oriented design. (b) Discuss the importance of structured design.	L2, CO3, 6M L2, CO3, 6M
10	Explain principles of good software design and their significance.	L2, CO3, 12M

Unit-4

S.No	2 Marks Questions (Short)	[BT Level][CO][Marks]
1	What are coding standards?	L1, CO4, 2M
2	Define code review.	L1, CO4, 2M
3	What is black box testing?	L1, CO4, 2M
4	What is white box testing?	L1, CO4, 2M
5	Define regression testing.	L1, CO4, 2M
6	What is debugging?	L1, CO4, 2M
7	What are program analysis tools?	L1, CO4, 2M
8	Define integration testing.	L1, CO4, 2M
9	What is system testing?	L1, CO4, 2M

10	What is performance testing?	L1, CO4, 2M

S.No	Descriptive Questions (Long)	[BT Level] [CO][Marks]
1	Explain coding standards and their importance in software development	L2, CO4, 12M
2	Describe different types of code reviews and their objectives.	L2, CO4, 12M
3	(a) Explain black box testing techniques. (b) Explain white box testing techniques.	L2, CO4, 6M L2, CO4, 6M
4	Compare black box and white box testing with examples.	L2, CO4, 12M
5	Explain unit, integration, and system testing with examples	L2, CO4, 12M
6	What are program analysis tools? Explain their role in testing	L2, CO4, 12M
7	Discuss debugging techniques and strategies	L2, CO4, 12M
8	Explain performance and regression testing with example	L2, CO4, 12M
9	Describe testing of object-oriented programs and its challenges.	L2, CO4, 12M
10	Explain testing strategies for large software systems.	L2, CO4, 12M

Unit-5

S.No	2 Marks Questions (Short)	[BT Level][CO][Marks]
1	Define software reliability	L1, CO5, 2M
2	What is statistical testing?	L1, CO5, 2M
3	What is ISO 9000 in software quality?	L1, CO5, 2M
4	Define SEI CMM.	L1, CO5, 2M
5	What is PSP (Personal Software Process)?	L1, CO5, 2M
6	Define Six Sigma in software	L1, CO5, 2M
7	What is CASE?	L1, CO5, 2M
8	What is reverse engineering in software	L1, CO5, 2M
9	What is software maintenance?	L1, CO5, 2M

10	What is software reuse?	L1, CO5, 2M

S.No	Descriptive Questions (Long)	[BT Level] [CO][Marks]
1	Explain software quality attributes and metrics.	L2, CO5, 12M
2	Describe software reliability and methods to achieve it.	L2, CO5, 12M
3	(a) Explain ISO 9000 quality standards for software. (b) Discuss SEI Capability Maturity Model levels.	L2, CO5, 6M L2, CO5, 6M
4	Explain PSP and Six Sigma concepts in software quality improvement.	L2, CO5, 12M
5	Describe the role and scope of CASE tools in software life cycle.	L2, CO5, 12M
6	Explain characteristics of software maintenance and its process models.	L2, CO5, 12M
7	Discuss software reverse engineering and its applications.	L2, CO5, 12M
8	Explain estimation of maintenance cost in software projects	L2, CO5, 12M
9	Discuss reuse approaches at organizational level.	L2, CO5, 12M
10	Explain quality management concepts in software engineering.	L2, CO5, 12M

Signature of the Staff :

Signature of Department Academic Committee Member 1:

Signature of Department Academic Committee Member 2:

Signature of Department Academic Committee Member 3: