Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER–V (NEW) EXAMINATION – WINTER 2020

Subject Code:3150711 Date:27/01/2021

Subject Name:Software Engineering

Time:10:30 AM TO 12:30 PM Total Marks: 56

Instructions:

1. **Attempt any FOUR questions out of EIGHT questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

Q.1	(a)	Distinguish between a program and a software product.	**03**
	(b)	Which are the major phases in the waterfall model of software development? Which phase consumes the maximum effort for developing a typical software product?	**04**
	(c)	With suitable illustration explain SPIRAL model evolutionary software development.	**07**
Q.2	(a)	What is Agile Manifesto?	**03**
	(b)	Define the terms: 1) Agility 2) Agile team	**04**
	(c)	What are the different activities in project planning? What is error tracking?	**07**
Q.3	(a)	What are the relative advantages of using either the LOC or the function point metric to measure the size of a software product?	**03**
	(b)	What are the types of metrics?	**04**
	(c)	What is requirement engineering? State its process and explain requirements elicitation problem.	**07**
Q.4	(a)	What is the purpose of timeline chart?	**03**
	(b)	Distinguish between verification & validation.	**04**
	(c)	Explain with example diagram the functional and behavioral modeling. How do we model the software's reaction to some external event?	**07**
Q.5	(a)	What are the different levels of abstraction?	**03**
	(b)	What are the common activities in design process?	**04**
	(c)	Discuss the differences between black box and white box testing.	**07**

Q.6	(a)	What are the different types of Cohesion?	**03**
	(b)	What are the various elements of data design?	**04**
	(c)	What do you mean by system testing? Explain in detail.	**07**
Q.7	(a)	What is the Objective of Formal Technical Reviews?	**03**
	(b)	What is DevOps?	**04**
	(c)	Explain Component Based software engineering in detail.	**07**
Q.8	(a)	State the need for software configuration review.	**03**
	(b)	What are the challenges with DevOps implementation?	**04**
	(c)	What is the use of CMM? Discuss different levels of SEI-CMM.	**07**

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Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – WINTER 2021

Subject Code:3150711 Date:01/01/2022

Subject Name:Software Engineering

Time:02:30 PM TO 05:00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			MARKS
Q.1	**(a)**	Write a short note on Software Configuration Management.	**03**
	(b)	Compare Spiral Model with Prototype model.	**04**
	(c)	What is Software Testing? What is the role of a Software Tester? Compare Black Box and White Box Testing.	**07**
Q.2	**(a)**	Compare Waterfall model with RAD model.	**03**
	(b)	Explain merits and demerits of Scrum.	**04**
	(c)	Explain Agile Development in detail.	**07**
		OR	
	(c)	Explain DevOps life Cycle.	**07**
Q.3	**(a)**	Explain Formal Technical Review.	**03**
	(b)	Define Coupling and Cohesion. What is the difference between cohesion and coupling?	**04**
	(c)	What is Requirement Engineering? List the Functional and Non-Functional requirements for Blood bank Management system.	**07**
		OR	
Q.3	**(a)**	State the difference between procedural Design and Object Oriented Design.	**03**
	(b)	Explain Software metrics used for software cost estimation.	**04**
	(c)	Write SRS For Students Result Management System.	**07**
Q.4	**(a)**	Write short note on Version Control.	**03**
	(b)	What are the fundamental differences between DevOps & Agile Development?	**04**
	(c)	Explain project scheduling process and Gantt Chart in detail.	**07**
		OR	
Q.4	**(a)**	Write short note on Six Sigma standard.	**03**
	(b)	Explain RMMM plan.	**04**
	(c)	What is the importance of Software Quality Assurance? Explain different CMM levels.	**07**
Q.5	**(a)**	Write short note on Reverse-engineering.	**03**
	(b)	Which are the Software quality standards? Explain any one.	**04**
	(c)	What is an architectural design? Enlist different style and patterns of architecture.	**07**
		OR	
Q.5	**(a)**	Write short note on Re-engineering.	**03**
	(b)	Explain the SQA activities.	**04**
	(c)	What is BVA? Explain merits and demerits of BVA.	**07**

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Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V (NEW) EXAMINATION – SUMMER 2021

Subject Code:3150711 Date:09/09/2021

Subject Name:Software Engineering

Time:10:30 AM TO 01:00 PM Total Marks:

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

Q.1	**(a)**	Explain software engineering as a layered technology.	**03**
	(b)	What is process model? Compare incremental process model with prototyping process model.	**04**
	(c)	What is SRS? What are the key elements of it? What are the qualities of a good SRS?	**07**
Q.2	**(a)**	What is Extreme Programming (XP)? What are the advantages of it?	**03**
	(b)	What is black box testing? What are the different black box testing techniques?	**04**
	(c)	What is DevOps? How it works? What are the DevOps principles & best practices?	**07**
		OR	
	(c)	Discuss SCRUM as agile software development process model.	**07**
Q.3	**(a)**	Discuss some of the problems that occur when requirements must be elicited from three or four different customers.	**03**
	(b)	You have been appointed a project manager for a major software products company. Your job is to manage the development of the next-generation version of its widely used word processing software. Because competition is intense, tight deadlines have been established and announced. What team structure would you choose and why? What software process model(s) would you choose and why?	**04**
	(c)	What is the importance of user interface? Discuss user interface design rules.	**07**
		OR	
Q.3	**(a)**	How do we assess the quality of a software design?	**03**
	(b)	You have been appointed a software project manager for a company that services the genetic engineering world. Your job is to manage the development of a new software product that will accelerate the pace of gene typing. The work is R&D oriented, but the goal is to produce a product within the next year. What team structure would you choose and why? What software process model(s) would you choose and why?	**04**
	(c)	What is architectural design? Discuss different style and patterns of architecture.	**07**
Q.4	**(a)**	Considering the aspects of the cost of software quality, which do you think is the most expensive and why?	**03**
	(b)	What is FTR? Enlist FTR guidelines.	**04**
	(c)	Explain the design concepts Modularity and Functional Independence in detail.	**07**
		OR	
Q.4	**(a)**	What elements of the WebApp can be “unit tested”? What types of tests must be conducted only after the WebApp elements are integrated?	**03**
	(b)	Quality and reliability are related concepts but are fundamentally different in a	**04**

number of ways. Discuss the differences.

(c) What is the importance of SQA? Discuss SQA activities. **07**

Q.5 **(a)** Using your own words, describe the difference between verification and validation. Do both make use of test-case design methods and testing strategies? **03**

(b) What are the four elements that exist when an effective SCM system is implemented? Discuss each briefly. **04**

(c) What is the importance of class model? Prepare the class model for a web-based order-processing system for a computer store. **07**

OR

Q.5 **(a)** What is white box testing? What are the different coverage based testing strategies. **03**

(b) Briefly discuss the process of reverse software engineering. **04**

(c) What are the elements of a behavioral model? Prepare use case diagram and sequence diagrams for ATM system of a bank. **07**

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Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–V(NEW) EXAMINATION – SUMMER 2022

Subject Code:3150711 Date:04/06/2022

Subject Name:Software Engineering

Time:02:30 PM TO 05:00 PM Total Marks: 70

Instructions:

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**
4. **Simple and non-programmable scientific calculators are allowed.**

			Marks
Q.1	**(a)**	What is Software Engineering? List down different myths for it.	**03**
	(b)	What are different layers of Software Engineering? Draw and explain it in short.	**04**
	(c)	Draw and explain the different phases of Waterfall Model.	**07**
Q.2	**(a)**	What is Agility? List down 12 principals of Agile Manifesto.	**03**
	(b)	Draw and explain different phases of Agile Process Model.	**04**
	(c)	Draw and explain Spiral Model with its advantages.	**07**
		OR	
	(c)	What is Coupling? What is Cohesion? Explain different types of Cohesion and Coupling with proper example.	**07**
Q.3	**(a)**	What is Requirement Engineering? How it is carried out in a Software Organizations?	**03**
	(b)	Create a SRS document for College Management System.	**04**
	(c)	What is Software Testing? Explain Black-box and White-Box Testing in details along with examples.	**07**
		OR	
Q.3	**(a)**	What is Software Quality? List down different Software Quality Metrics?	**03**
	(b)	List down various Software Design Principles applicable to College Management System.	**04**
	(c)	Write a short note on: (1) Function-Oriented Design (2) User Interface Design	**07**
Q.4	**(a)**	What is Software Maintenance? Explain different types of it in short.	**03**
	(b)	Create a list of Software Reverse Engineering phases for College Management System and explain in short.	**04**
	(c)	How version and change are controlled within and across organizations? Explain it.	**07**
		OR	
Q.4	**(a)**	Define: Risk Identification, Risk Refinement, and Risk Mitigation.	**03**
	(b)	How software organization go from different maturity level of SEI CMM? Explain it.	**04**
	(c)	How organization can get ISO 9000 certification? Explain the process.	**07**
Q.5	**(a)**	What is DevOps? List down its toolchain for development process.	**03**
	(b)	How DevOps practice be adopted for software development process.	**04**
	(c)	Explain 7Cs of DevOps lifecycle.	**07**

OR

Q.5	**(a)**	What is Component Based Software Engineering? What are its advantages?	**03**
	(b)	How a typical software is being Reengineered? Explain why is required?	**04**
	(c)	Explain Computer-Aided Software Engineering in detail.	**07**