

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. **03**
Do both make use of test-case design methods and testing strategies?
- (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**
