

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-V EXAMINATION – SUMMER 2025

Subject Code:3150711

Date:15-05-2025

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**
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|-----|--|-----------|
| (a) | What is software process? Explain activities of generic process framework. | 03 |
| (b) | Differentiate between prescriptive process model and evolutionary process model. | 04 |
| (c) | Explain the principles of a software design. | 07 |

- Q.2**
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|-----|--|-----------|
| (a) | Considering the aspects of the cost of software quality, which do you think is the most expensive and why? | 03 |
| (b) | Differentiate between whitebox testing and blackbox testing. | 04 |
| (c) | What is Agile methodology? Explain principles of agile methodology. | 07 |

OR

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|-----|--|-----------|
| (c) | What is DevOps? Discuss principles & best practices of it? | 07 |
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- Q.3**
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|-----|--|-----------|
| (a) | Explain the estimation of cost and effort for software project. | 03 |
| (b) | How does a sequence diagram differ from a state diagram? How are they similar? | 04 |
| (c) | What is use case? Which UML components are shown in use case diagram? Prepare use case diagram for core functionalities of “WhatsApp” application. | 07 |

OR

- Q.3**
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|-----|---|-----------|
| (a) | Discuss some of the problems that occur when requirements must be elicited from three or four different customers. | 03 |
| (b) | What are the different system views that can be modelled using UML? What are the different UML diagrams which can be used to capture each of the views? | 04 |
| (c) | What is the importance of class model? Prepare class model for a web-based order-processing system. | 07 |

- Q.4**
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|-----|--|-----------|
| (a) | Distinguish between software verification and software validation. Can one be used in place of the other? Justify your answer. | 03 |
| (b) | What is SCM? Discuss the elements of effective SCM system. | 04 |
| (c) | Discuss Six Sigma for software engineering. | 07 |

OR

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| Q.4 | (a) Differentiate between code inspection and code walkthrough. | 03 |
| | (b) What are some of the best KPIs for evaluating DevOps performance? | 04 |
| | (c) Discuss testing strategies for conventional software. | 07 |

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|------------|--|-----------|
| Q.5 | (a) What is software reliability? How do you measure it? | 03 |
| | (b) What is FTR? Enlist FTR guidelines. | 04 |
| | (c) Discuss SCRUM as agile software development process model. | 07 |

OR

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| Q.5 | (a) What is Extreme Programming (XP)? What are the advantages of it? | 03 |
| | (b) Explain the process of reverse software engineering. | 04 |
| | (c) Discuss testing strategies for web applications. | 07 |
