

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech. II Year II Semester Supplementary Examinations December-2025

SOFTWARE ENGINEERING

(Common to CSE & CSIT)

Time: 3 Hours

Max. Marks: 70

PART-A

(Answer all the Questions 10 x 2 = 20 Marks)

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|---|-----|----|----|
| 1 a Define software engineering. | CO1 | L1 | 2M |
| b Describe the waterfall model. | CO1 | L2 | 2M |
| c Demonstrate how to write a functional requirement. | CO2 | L3 | 2M |
| d Analyze the consequences of poor risk management. | CO2 | L4 | 2M |
| e Characteristics of a good software design. | CO3 | L2 | 2M |
| f What is structured analysis? | CO3 | L1 | 2M |
| g Define black-box testing. | CO4 | L1 | 2M |
| h Demonstrate white-box testing on password validation. | CO4 | L3 | 2M |
| i Define CASE tools. | CO5 | L1 | 2M |
| j What is software reuse? | CO5 | L1 | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

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| 2 a Describe spiral model with a neat diagram. | CO1 | L2 | 5M |
| b Compare different software life cycle models. | CO1 | L4 | 5M |

OR

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| 3 a A startup company needs to build a prototype quickly to present to investors. Recommend the appropriate software development model and explain how it helps in rapid delivery. | CO1 | L3 | 5M |
| b Use agile model to explain iterative development. | CO1 | L4 | 5M |

UNIT-II

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| 4 a Explain steps in requirement gathering. | CO2 | L2 | 5M |
| b Analyze the need for risk management in projects. | CO2 | L4 | 5M |

OR

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|---|-----|----|----|
| 5 a Evaluate project estimation techniques and compare empirical vs heuristic models. | CO2 | L5 | 5M |
| b Write SRS for an online ticket booking system. | CO2 | L3 | 5M |

UNIT-III

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| 6 a Evaluate cohesion and coupling with suitable examples. How do they impact maintainability? | CO3 | L5 | 5M |
| b Justify the need for effective UI design in increasing user productivity and satisfaction. | CO3 | L5 | 5M |

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| 7 a A university ERP system needs modularity—apply design principles to plan. | CO3 | L2 | 6M |
| b Design a user interface for a mobile banking app targeting elderly users. What design decisions will you make. | CO3 | L3 | 4M |

UNIT-IV

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| 8 a Compare ISO 9000 vs Six Sigma. | CO4 | L4 | 6M |
| b Analyze impact of poor documentation. | CO4 | L4 | 4M |

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| 9 a During integration, modules fail. Discuss how testing helps. | CO4 | L2 | 5M |
| b During integration testing of a payroll system, several modules fail to communicate properly. Analyze how white-box and black-box testing could help identify and resolve the issues. | CO4 | L4 | 5M |

UNIT-V

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| 10 a Describe CASE environment architecture. | CO5 | L2 | 5M |
| b How to apply reverse engineering and reuse in Legacy system maintenance. | CO5 | L3 | 5M |

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| 11 a Evaluate impact of CASE on SDLC productivity. | CO5 | L5 | 5M |
| b A 10-year-old legacy system needs frequent bug fixes and changes in functionalities. Describe how reverse engineering and maintenance models can be applied to extend the life of this system. | CO5 | L3 | 5M |

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