

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

M.Tech I Year II Semester Regular Examinations August-2026

ADVANCES IN SOFTWARE ENGINEERING

(Computer Science and Engineering)

Time: 3 Hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- 1 a Explain Software Engineering as a layered technology with a neat diagram. CO1 L2 6M
- b Explain the Unified Process Framework. CO1 L2 6M

OR

- 2 Explain Capability Maturity Model Integration (CMMI) and describe its maturity levels in detail. CO1 L2 12M

UNIT-II

- 3 Explain the Requirement Validation process and describe techniques used to ensure requirement correctness. CO2 L2 12M

OR

- 4 a Define Requirement Engineering and explain its importance in software development. CO2 L1 6M
- b What is Requirement Elicitation? Describe common elicitation techniques. CO2 L1 6M

UNIT-III

- 5 Explain Component-Level Design and describe the steps involved in designing software components. CO3 L2 12M

OR

- 6 a Define Component-Level Design in software engineering. Explain it. CO3 L2 6M
- b Explain the objectives of component-level design. CO3 L2 6M

UNIT-IV

- 7 a What is Unit Testing in software testing? Explain it? CO4 L2 6M
- b Explain Integration Testing with an example. CO4 L2 6M

OR

- 8 a Explain Black - box testing techniques with suitable examples. CO4 L2 6M
- b Explain White-box testing techniques and describe their advantages. CO4 L2 6M

UNIT-V

- 9 a Explain continuous integration (CI) in software development. CO5 L2 6M
- b Analyze the continuous deployment (CD) in software development. CO5 L3 6M

OR

- 10 Discuss DevOps practices and explain how DevOps improves collaboration between development and operations teams. CO5 L3 12M

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