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Following Paper ID and Roll No. to be filled in your Answer Book.

PAPER ID : 43211 Roll No. 1 2 4 0 4 3 2

B. Tech. Examination, 2026

(Even Semester)

SOFTWARE ENGINEERING

Time : Three Hours] *[Maximum Marks : 60*

Note :– (i) Attempt all questions.

(ii) Draw neat diagrams wherever necessary.

SECTION–A

1. Attempt all parts of the following : 8×1=8

(a) Define software engineering.

(b) What is software life cycle model?

(c) Define software cost estimation.

(d) Define extreme programming (XP).

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(e) What is design pattern?

(f) Define integration testing.

(g) What is SEI-CMM?

(h) Define software project scheduling.

SECTION – B

2. Attempt any two parts of the following : 2×6=12

(a) Compare waterfall, incremental and spiral models with advantages and limitations.

(b) Explain formal requirement specification using algebraic or axiomatic method.

(c) Describe UML diagrams used in software design and explain any two with example.

(d) Explain COCOMO model and estimate effort for a project of 30 KLOC. (Assume suitable constants.)

SECTION – C

Note :– Attempt all questions. Attempt any two parts from each questions. 8×5=40

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3. (a) Explain phases of software development life cycle (SDLC) with neat diagram.

   (b) Discuss software cost estimation techniques and staffing level estimation.

   (c) Explain software maintenance types with real-life examples.

4. (a) Explain SRS document structure and its characteristics.

   (b) Discuss requirement verification and validation techniques.

   (c) Explain CASE tools and their role in software development.

5. (a) Compare function-oriented design and object-oriented design.

   (b) Explain unit-testing, integration testing and system testing strategies.

   (c) Describe debugging techniques and their importance.

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6. (a) Explain ISO-9001 and SEI-CMM levels.

(b) Discuss software project planning and risk management.

(c) Explain software reliability and fault tolerance mechanisms.

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