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

PAPER ID : 43211 | Roll No. 1 2 3 0 9 3 2 0 9 4

B. Tech Examination 2024-25

(Even Semester)

SOFTWARE ENGINEERING

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

Note :– Attempt all questions.

SECTION–A

1. Attempt all parts of the following : $1 \times 8 = 8$

(a) What is the difference between program and software?

(b) What is staffing level estimation in software?

(c) What are the drawbacks of spiral model?

(d) What does level 0 DFD represent?

(e) Differentiate between software version and software revision.

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(f) List the process maturity levels in SEIs CMM.

(g) Explain the need of software project management.

(h) What is the difference between Alpha testing and Beta testing?

SECTION–B

2. Attempt any two parts of the following : $2 \times 6 = 12$

(a) What is software engineering? Explain the layered approach to software engineering.

(b) Differentiate between functional and non-functional requirements of software engineering.

(c) What is software design? Explain the various principles and design concepts of software design.

(d) Why are three different levels of testing, unit testing, integration testing and system testing necessary? Discuss the main purpose of each of these testing.

SECTION – C

Note: Attempt all questions. Attempt any two parts from each question. $8 \times 5 = 40$

3. (a) What is waterfall model? Describe the activities of waterfall model and also mention its drawbacks.

(b) What are the important activities that are carried out during the feasibility study phase? Explain.

(c) What is meant by the size of a software project? Waht are the metrics for project size estimation? Explain lines of code (LOC) metric of project size estimation.

4. (a) Categorize the use of case tools in software engineering with their advantages and disadvantages.

(b) What is requirement elicitation? Explain, in brief, the various methods of requirement elicitation.

(c) List advantages of software requirement specification. Describe characteristics of a good software requirement specification.

5. (a) What are the main advantages of using an object-oriented design approach over a function oriented approach? Explain.

(b) Describe the errors commonly found during unit testing?

(c) What is ISO 9001 certification? What are the salient features of ISO 9001 certification? What are the salient features of ISO 9001 requirements?

6. (a) Define cohesion. What is functional cohesion? Does functional cohesion within a module bring good software design?

(b) What is software maintenance? Discuss the different types of software maintenance.

(c) What are the various debugging approaches? Discuss them will the help of examples.

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