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B. Tech. EXAMINATION, Jan. 2021

Semester V (CBCS)

SOFTWARE ENGINEERING (CSE, IT)

CS-505

Time : 3 Hours

Maximum Marks : 60

The candidates shall limit their answers precisely within the answer-book (40 pages) issued to them and no supplementary/continuation sheet will be issued.

Note : Attempt *Five* questions in all, selecting *one* question from each Sections A, B, C and D. Q. No. 9 is compulsory.

Section A



1. (a) Discuss the selection criteria for choosing a Software Development Life-Cycle (SDLC) model. 5

- (b) Draw a schematic diagram to represent the Waterfall Model of software development. Explain all its phases. 5
2. (a) Write a detailed note on the organization of the Software Requirements Specification (SRS) document. 5
- (b) Discuss the Structured Analysis and Design technique in detail. 5

Section B

3. Write a detailed note on the project planning. What are the major activities that are carried out during project planning ? Discuss any two of them in detail. 10
4. (a) Explain in detail, how the staffing-level requirements for a project can be determined. 5
- (b) What do you understand by project risks ? How can project risks be effectively identified and managed ? 5

Section C

5. (a) Write a short note on the SEI Capability Maturity Model (CMM). How is it used for assessing software quality ? 5
- (b) What do you understand by PSP ? How is it used to improve software quality ? 5
6. (a) Brief about White Box testing techniques. Discuss any one of them in detail with a suitable example. 5
- (b) What is System Testing ? How is it different from Integration and Unit testing ? Explain in detail. 5

Section D

7. (a) Discuss any one of the process models for software maintenance in detail. 5
- (b) Describe the term software reuse. What are the various approaches to software reuse ? 5
8. (a) What do you understand by refactoring ? Explain in detail with illustrative examples of the refactoring. 5

(b) Explain the agile software development model in detail. Give an example of a project for which the agile models would be appropriate than the conventional waterfall model. 5

(Compulsory Question)

9. (a) What is meant by system requirements ? Justify using an example.

(b) What are the factors that have contributed to the present software crisis ?

(c) Distinguish between requirements analysis and requirements specifications.

(d) In the context of project scheduling, what do you understand by the Critical Path ?

(e) What are the main goals of software project management ?

(f) Write a short note on stress testing.

(g) What are the general issues associated with testing ?

(h) What do you understand by non-execution based testing ?

(i) What are the different types of software maintenance that a software product might need ?

(j) What is pair programming ? What are its advantages ? $2 \times 10 = 20$