

SOFTWARE ENGINEERING

Time: Three hours

Maximum: 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. A _____ software project involves one programmer working perhaps part time, for a few days or few weeks and results in a program of less than 500 statements, packaged in 10 to 20 subroutines.

(a) Small (b) Trivial
(c) Medium-sized (d) Large

2. Brooks has observed that the number of communication paths among n programmers grows as _____

(a) $n(n-1)/2$ (b) $n(n+1)/2$
(c) $n(n+2)/2$ (d) $n(n^*n)$

3. _____ can be defined as the probability that program will perform a required function under stated conditions for a stated period of time.

(a) Efficiency (b) Accuracy
(c) Reliability (d) Robustness

4. A _____ is a hierarchical chart that accounts for the individual parts of a system.

(a) Delphi cost estimation
(b) Expert Judgment
(c) Work Breakdown Structure
(d) COCOMO

5. _____ are concise notations for defining both finite and infinite set of symbol strings.

(a) Implicit equations
(b) Axioms
(c) Regular expression
(d) Decision Table

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6. A _____ is represented as a bipartite directed graph.

(a) Implicit equations
(b) Axioms
(c) Regular expression
(d) Petri net

7. _____ is the intellectual tool that allows us to deal with concepts apart from particular instances of those concepts.

(a) Abstraction
(b) Information hiding
(c) Structure
(d) Concurrency

8. The desired level of coupling is _____

(a) No coupling
(b) Control coupling
(c) Common coupling
(d) Data coupling

9. Verification is defined as _____

(a) are we building the right product?
(b) are we building the right project?
(c) are we building the product right?
(d) are we building the project right?

10. Software testing concerned with exercising and observing product behavior is called _____

(a) Validation
(b) Maintenance
(c) Dynamic Verification
(d) Quality Assurance

PART B — (5 × 7 = 35 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) What are the various tasks performed during the lifetime of a software product? Describe.

Or

- (b) Explain the characteristics of various team structures.

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12. (a) What is the advantage of expert judgment? Explain.

Or

- (b) Write a brief note on Delphi cost estimation.

13. (a) What is regular expression? Explain.

Or

- (b) What are the properties that a software requirements specification should possess? Explain.

14. (a) What do you mean by module? Write down the properties of module.

Or

- (b) What do you mean by coupling? Describe the rating scale of coupling.

15. (a) What is Configuration management? Discuss.

Or

- (b) Discuss the software quality assurance plan.

PART C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. What are the project size categories for software products? Describe.
17. What are the major factors that influence software cost? Discuss.
18. Describe any two relational notations of formal specification techniques.
19. Explain any four design notations with examples.
20. Discuss the development activities that enhance software maintainability.
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