

2020

COMPUTER SCIENCE — GENERAL

Paper : SEC-A-2

(Software Engineering)

Full Marks : 80

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Answer **question nos. 1 & 2** and **any four** questions from the rest.

1. Answer **any ten** questions :

2×10

- (a) What is system testing?
- (b) Mention the limitations of waterfall model.
- (c) Differentiate between alpha and beta testing.
- (d) Define cyclomatic complexity.
- (e) What is stress testing?
- (f) What do you understand by quality assurance of software?
- (g) What is re-engineering?
- (h) Why is test case required?
- (i) What is branch coverage?
- (j) Name the different types of errors in software.
- (k) What do you understand by closed system?
- (l) Explain Delphi cost estimation.
- (m) What is meant by heuristic approach?
- (n) What is linearly independent path in path coverage?
- (o) Explain the requirement of maintenance.

2. Write short notes on **any four** :

5×4

- (a) Coupling and its types
- (b) Cyclomatic complexity
- (c) COCOMO
- (d) Unit Testing
- (e) Decision tree
- (f) Function point metric.

Please Turn Over

3. (a) Discuss Spiral model for SDLC. What are the disadvantages of Spiral model?
(b) Discuss how a physical DFD can be transformed into a logical DFD. (5+2)+3
 4. (a) Discuss Equivalence class partitioning and Boundary value analysis under Black Box testing.
(b) Define the attributes that contribute to a quality software.
(c) Why is requirement analysis required in SDLC? 5+3+2
 5. (a) Discuss Control Flow Graph with an example.
(b) Differentiate between software verification and validation.
(c) What is debugging? 5+3+2
 6. (a) What are the functional and non-functional requirements of Software?
(b) What are the characteristics of a good SRS document? 5+5
 7. (a) Design a context diagram and Level 1 DFD of a Hospital Management System.
(b) Differentiate between DFD and Flow chart. (2+5)+3
 8. (a) Discuss about iterative waterfall model of SDLC.
(b) Write the importance of decision table.
(c) What are the good coding conventions? 5+2+3
 9. (a) Differentiate between coupling and cohesion.
(b) What do you understand by software fault?
(c) What are the major objectives of software testing? 4+2+4
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