

2022

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 and 2* and *any four* questions from the rest.

1. Answer *any ten* questions :

2×10

- (a) What is decision table?
- (b) What do you mean by non-functional requirement? Give an example.
- (c) Write two limitations of waterfall model.
- (d) What is debugging?
- (e) Define cyclometric complexity.
- (f) What do you mean by V-model in SDLC?
- (g) What is integration testing?
- (h) What is stress testing?
- (i) What is content diagram?
- (j) What are the various types of software maintenance techniques?
- (k) What is the purpose of SRS document?
- (l) What is the use of COCOMO?
- (m) What do you understand by software failure?
- (n) Write two disadvantages of DFD.
- (o) What is a structure chart?

2. Write short notes on *any four* :

5×4

- (a) Waterfall model
- (b) Cohesion and its types
- (c) Software reliability and availability

Please Turn Over

- (d) Data dictionary  
(e) Decision Table  
(f) System testing
3. (a) Briefly discuss about different phase of spiral model. Why is it called meta model?  
(b) What is meant by software Development Life Cycle (SDLC)? (6+2)+2
4. (a) What is the purpose of DFD? Write the differences between logical DFD and physical DFD.  
(b) Illustrate the use of Decision Tree. (2+4)+4
5. (a) What is meant by 'Quality Software'? What are the attributes that contribute to quality software? Explain.  
(b) What is process metrics? (2+6)+2
6. (a) Discuss the differences between black box testing and white box testing.  
(b) In a Hospital Management System develop a DFD for a 'Ward Service Management System'. State all your assumption. 4+6
7. (a) Differentiate between DFD and Flowchart.  
(b) Briefly discuss about software verification and software validation process. 4+6
8. (a) What is Control Flow Graph? Construct a Control Flow Graph for the following code segment.  
fine (x, y)  
{  
    while (x != y) {  
        if (x > y)  
            x = x - y;  
        else y = y - x;  
    }  
    return x;  
}
- (b) What do you understand by modular design? Why is low coupling and high cohesion desirable? (2+4)+(2+2)
9. (a) What are the characteristics of a good SRS document?  
(b) How does iterative waterfall model overcome the drawbacks of the classical waterfall model? 5+5