Reg. No. : | | | | | | | | | | | | |

Question Paper Code : 70385

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2021.

Fourth Semester

Information Technology

CS 6403 – SOFTWARE ENGINEERING

(Common to Computer Science and Engineering)

(Regulations 2013)

Time : Three hours Maximum : 100 marks

Answer ALL questions.

PART A — ($10 \times 2 = 20$ marks)

1. Depict the relationship between work product, task, activity and system.

2. List two deficiencies in waterfall model. Which process model do you suggest to overcome each deficiency?

3. What is the need for feasibility analysis?

4. How are the requirements validated?

5. If a module has logical cohesion, what kind of coupling is this module likely to have?

6. What is the need for architectural mapping using data flow?

7. Mention the purpose of stub and Driver used for testing.

8. Define verification and validation testing.

9. What is risk management?

10. How is productivity and cost related to function points?

PART B — ($5 \times 13 = 65$ marks)

11. (a) (i) Discuss the prototyping model. What is the effect of designing a prototype on the overall cost of the software project? (7)

(ii) Describe the type of situations where iterative enhancement model might lead to difficulties. (6)

Or

(b) (i) Elucidate the key features of the software process models with suitable examples. (6)

(ii) What is the role of user participation in the selection of a life cycle model? (7)

12. (a) What is requirements elicitation? Briefly describe the various activities performed in requirements elicitation phase with an example of a watch system that facilitates to set time and alarm.

Or

(b) What is the purpose of data flow diagrams? What are the notations used for the same. Explain by constructing a Context flow diagram level-0 DFD and level-1 DFD for a library management system.

13. (a) Explain the various coupling and cohesion methods used in Software design. (13)

Or

(b) For a Case study of your choice show the architectural and Component design. (13)

14. (a) (i) What is white box testing? Explain. (7)

(ii) Consider the pseudocode for simple subtraction given below: (6)

Program 'Simple Subtraction'

Input (x, y)

Output(x)

Output(y)

If $x > y$ then DO

$x - y = z$

Else $y — x = z$

EndIf

Output (z)

Output 'End Program"

Perform basic path testing and generate test cases.

Or

(b) (i) What is integration testing? Discuss any one method in detail. (8)

(ii) Describe black box testing. Design the black-box test suite for the following program. The program computes the intersection point of two straight lines and displays the result. It reads two integer pairs (m1, c1) and (m2, c2) defining the two straight lines of the form $y = mx + c$. (5)

15. (a) Explain in detail about the risk management in a software development life cycle. (13)

Or

(b) (i) Discuss about COCOMO II model for software estimation. (8)

(ii) Explain about the factors that cause difficulty in testing a software. (5)

PART C — ($1 \times 15 = 15$ marks)

16. (a) What is the purpose of DFD? Explain the components of the DFD. Construct the context diagram, level-0 DFD and level-1 DFD for a salary management system and explain.

Or

(b) Write about make/Buy decision making. Explain it with a scenario.

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