

4. (a) What is DFD? Draw a DFD of a library management system. (10)
- (b) What is Architectural Design and why it is important in building a software. (5)
5. (a) Explain in detail about steps followed in Risk Management with diagram. (10)
- (b) Define module cohesion and explain 5 types of cohesion. (5)
6. (a) Calculate the function Point, productivity, documentation, and cost per function for software application with multiple Processing Factors 5,1, 0, 4, 3, 5, 4, 3, 4, 5, 2, 3, 4, 2 by using following given Data: The number of EI(Avg): 22, The number of EO(Low): 45, The number of EI(High): 06, The number of ILF(Avg): 05, The number of ELF(Low): 02, Effort: 37 MM, Software technical documents: 250 pages, User related documents: 120 pages and Budgeting/Cost: \$7520 per month. (10)
- (b) Explain any one technique of white box testing. (5)

(100)

[This question paper contains 4 printed pages.]

Your Roll No.....

Sr. No. of Question Paper : 3674

H

Unique Paper Code : 6202452401

Name of the Paper : Software Modelling

Name of the Course : B.Voc.

Semester : III

Duration : 3 Hours

Maximum Marks : 90

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt total 5 questions. Q1 (30 marks) is compulsory to attend.
3. Rest, Attempt any 4 questions (15 marks each) more.

P.T.O.

1. (a) Which software life cycle model allows for iterative development and incorporates risk analysis? (1)
- (b) Write any two characteristics of software as a product. (2)
- (c) Differentiate between Verification and Validation. (3)
- (d) Mention any THREE non-functional requirements on software to be development. (3)
- (e) What is the role of data dictionary? (3)
- (f) What is the prime objective of software engineering? (3)
- (g) What problems are likely to arise if two modules have high coupling. (3)
- (h) A simple stand – alone software utility is to be developed in 'C' programming by a team of software experts for a computer running Linux and the overall size of this software is estimated to be 20,000 lines of code. Considering $(a, b) = (2.4, 1.05)$ as multiplicative and exponential factor for the basic COCOMO effort estimation equation and $(c, d) = (2.5, 0.38)$ as multiplicative and

- exponention factor for the basic COCOMO development time estimation equation, approximately how long does the software project take to complete? (4)
- (i) Differentiate between data flow diagram and data dictionaries. (4)
 - (j) List the important properties of modular system. (4)
2. (a) Write short notes on the following terms :
(2.5×4=10)
 - (i) UMBRELLA ACTIVITIES
 - (ii) SPIRAL MODEL
 - (iii) SRS
 - (iv) VALIDATION TESTING
 - (b) List out the five core principles of Software Engineering. (5)
3. (a) What is CMMI and explain about CMMI models in detail. (10)
 - (b) What is Requirement Elicitation and how it is done. (5)