Sub Code: CST 322 **ROLL NO……..……..**

EVEN SEMESTER EXAMINATION, 2022 – 23

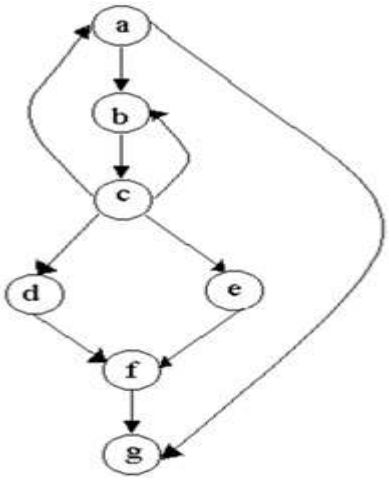
I Year, M.Tech. – Computer Science & Engineering

SOFTWARE ENGINEERING

Duration: 3:00 hrs **Max Marks: 100**

Note: - Attempt all questions. All Questions carry equal marks. In case of any ambiguity or missing data, the same may be assumed and state the assumption made in the answer.

Q 1.	Answer any four parts of the following. a) What is software engineering? Explain major characteristics of software. b) Explain spiral model with diagram. c) List out the main differences between iterative enhancement and prototyping model. d) What is software process? Why is it difficult to improve it? e) Consider a project as University Management System, which life cycle model should be used for its development and why? f) Differentiate between measures, matrices and measurement.	5x4=20
Q 2.	Answer any four parts of the following. a) What is requirement engineering? Write down the various steps of requirement engineering. b) Construct use case diagram and context diagram for Library Management System. c) Explain any three requirement elicitation techniques. d) State the model of a data dictionary and its contents.What are its advantages? e) Discuss the various key process areas of SEI –CMM at various maturity levels? f) What is SRS? List out various characteristics of a good SRS?	5x4=20
Q 3.	Answer any two parts of the following. a) What is modularity? What are the effects of module coupling and cohesion in software design? Write down all types of coupling in detail. b) What is Function point? Given the following values, compute the function point when all CAF and UFP weighting factors are average. User Input- 50 User Output- 40 User Inquiries- 35 User Files- 06 External interface-04 c) Describe the various strategies of software design. If some existing modules are to be reused in building the new system, which design strategy is used and why?	10x2= 20
Q 4.	Answer any two parts of the following. a) Consider a program for determining the previous date. Its input is a triple of day, month and year with the values in the range Day= from interval[1,31] Month= from interval[1,12] Year =from interval[1900,2025] The possible output would be previous date or invalid input date. Design the Boundary Value Analysis test cases.	10x2= 20

	b) Define functional and structural testing. Consider the following flow graph and find out the cyclomatic complexity using any three different methods.  c) Explain the following: i) Validation and verification ii) Regression and Mutation testing iii) Alpha, Beta and Acceptance Testing	
Q 5.	Answer any two parts of the following. a) What do you mean by software maintenance? Describe various categories of maintenance. Which category consumes maximum effort and why? b) Explain COCOMO model. Consider a project was estimated to be 400 KLOC. Calculate the effort and development time for this project. c) What is reverse engineering. Discuss levels of reverse engineering. How it is different from re-engineering?	10x2= 20

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