[This question paper contains 4+2 printed pages]

Your Roll No. .....

1949

B.Sc. (H) Computer Science/IV Sem. **C**

Paper 402—Software Engineering

(Admissions of 2001 to 2010)

Time : 3 *Hours* *Maximum Marks* : 75

(Write your Roll No. on the top immediately on receipt of this question paper.)

Section A

(Attempt *All* questions.)

1. (*a*) Which is more important—the product or the process ? 4

(*b*) What do you understand by process maturity ? Describe the various levels of CMM with key process areas. 6

P.T.O.

(*c*) Is it possible to assess the quality of software if the customer keeps changing the functional requirements ? 3

2. (*a*) You have been asked to build an Online Examination System for University of Delhi :

(*i*) Develop an entity/relationship diagram that describes data objects, attributes and relationships. 6

(*ii*) Develop a use case for the system. 4

(*iii*) Develop a level-1 DFD for the system. 4

(*iv*) Map the DFD into software architecture ? 3

(*b*) What do you understand by software metrics ? Discuss the various product metrics and project metrics for software development. 5

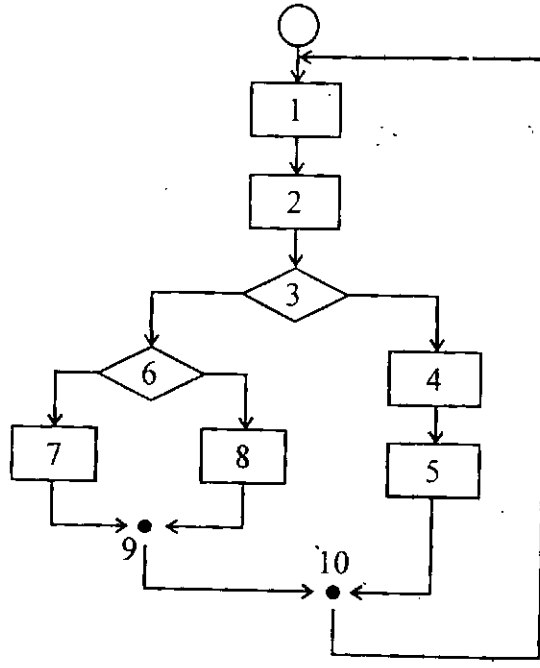
Section B

(Attempt any *four* questions.)

3. (*a*) You have been appointed a project manager for a major software product company. Your job is to manage the development of the next generation version of its widely used word-processing software. Because competition is intense, tight deadlines have been established an announced. Which model and team structure would you choose and why ? 5

(*b*) Give *four* measures of software quality. Define each. 5

4. (*a*) For the flow chart given below, draw the flow graph and compute the Cyclomatic Complexity. 5



(*b*) Define a risk and explain the attributes which should be considered while developing a risk table. 5

5. Write notes on the following (any *four*) : 10

(*a*) Timeline Charts

(*b*) Formal Technical Review (FTR)

(*c*) Software Configuration Management (SCM)

(*d*) Information Engineering

(*e*) Basis Path Testing.

6. Differentiate between the following (any *four*) : 10

(*a*) Facilitated Application Specification Techniques (FAST) and Quality Function Deployment (QFD)

(*b*) Coupling *Vs.* Cohesion

(*c*) Transform Flow *Vs.* Transaction Flow

(*d*) System Testing *Vs.* Validation Testing

(*e*) Project Metrics *Vs.* Process Metrics.

7. (*a*) Explain Pareto Principle. How does it apply to software testing ? 3

(*b*) What do you understand by Defect Removal Efficiency ? How does it assist the developer to improve software quality ? 4

(*c*) Explain the various reusable software resources during project planning. 3