

P1379

[3764] - 421

B.E. (Computer Engineering)

SOFTWARE TESTING & QUALITY ASSURANCE

(2003 Course)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer any three questions from each section.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right indicate full marks.*
- 4) *Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and steam tables is allowed.*
- 5) *Assume suitable data, if necessary.*

SECTION - I

- Q1)** a) How would you begin to measure the quality of software? [8]
b) What is good data and how to collect & define data? [10]

OR

- Q2)** a) A commonly used software quality measure in industry is the number of known errors or thousand lines of product source code. Compare the usefulness of this measure for developer and users. What are the possible problems with relying on this measure as the sole expression of software quality? [10]
b) Explain why it is wrong to assert that LOC is bad software measure? [8]

- Q3)** a) What are the aspects of that software size, length & reuse? [8]
b) Draw Bieman's data dependency graph model of information flow
i) Initialize
if $x < y$
then $A = B$
else $A = C$
 $D = A$

- ii) Initialize
 $A=B$
 While $X > A$ do
 $A = f(A,B)$
 end. [8]

OR

- Q4) a) Draw various common flow graphs as per program structure models or as per basic control constructs in imperative language programming. [8]
- b) Define & Explain briefly NMC, DIT, NOC, CBO, RFC, LCOM. [8]

- Q5) a) What is positive and negative testing? Explain with examples. [8]
- b) Write any algorithm & draw a control flow graph representation for the same algorithm. [8]

OR

- Q6) a) Write down the defect classes & their origin of defects. [8]
- b) Describe forecasting and planning tools with example. [8]

SECTION - II

- Q7) a) Write the goal of integration testing & describe top-down testing. [8]
- b) What are the approaches to test cost estimation? [8]

OR

- Q8) a) Explain how to form the software test group stepwise. [8]
- b) Explain the advice of Beizer in recovery testing. What we do detect in recovery testing? [8]

- Q9) a) Explain DRE or efficiency of product. [8]
- b) What is NSI? Explain customer satisfaction metrics. [8]

OR

- Q10) a) Explain 5 levels of process maturity in CMMI. [8]
- b) Explain ISO & briefly give the narration how we can improve the quality of the product using ISO. [8]

- Q11) a) Describe the sources of input for requirement of general purpose software products. [8]
- b) How one should decide what defects should be fixed in a patch bundle? [8]

OR

- Q12) a) Explain the typical organization structure in product organizations. [8]
- b) What is the role of support analyst in problem reporting? Explain with neat diagram. [10]

