*This question paper contains 4 printed pages.]*

*Your Roll No.* .....

**1794** **A**

## B.Sc.(H) Computer Science / IV Sem.

Paper 402 – Software Engineering

(For Admissions of 2001 and onwards)

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

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

*Attempt all questions. Parts of a question must be answered together.*

1. (a) "Unrealistic deadlines" are a fact of life in Software Development Business. What do you think, are the reasons for unrealistic deadlines? How would you proceed if you are faced with such a situation? 3

(b) What is a Prototyping Process Model? Under what circumstances, it is recommended to use this Model. 4

(c) What is the need for Software Sizing? What are the various approaches used for Software Sizing? 5

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(d) Discuss the impact of software reuse on productivity, quality and cost of the project? 3

2. (a) Compute the Function Point value for a project with the following Information

Domain characteristics:

| | |
|---|---|
| No. of user inputs | 8 |
| No. of user outputs | 12 |
| No. of user enquiries | 4 |
| No. of files | 2 |
| No. of external interfaces | 1 |

Assume that Complexity Adjustment Factors are average.

What extra information will be required to compute feature point for the above problem? 5

(b) What are Umbrella activities? List some such activities used in the SDLC process. 3

(c) List the Characteristics of a Testable Software? 3

(d) What is Coupling? Give different types of coupling along with an example. 4

3. (a) Why do we strive for high Cohesion and low Coupling for designing a software? 2

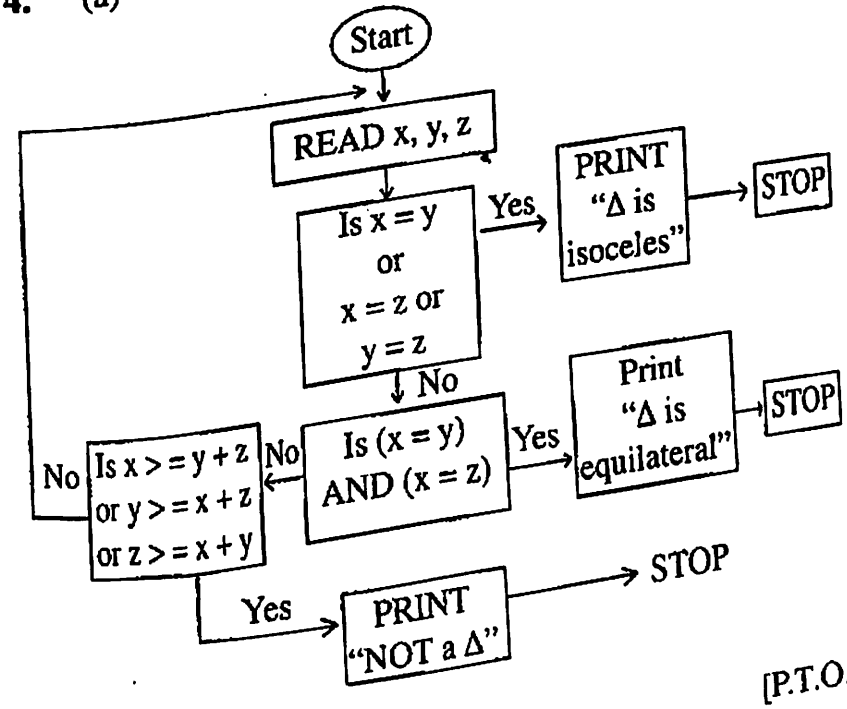
(b) What do you understand by the term Software Quality Assurance (SQA) ? What are the various activities carried out by the SQA team? 4

(c) What is a Gantt chart? How is it used in Project Scheduling and Monitoring ? 4

(d) Using COCOMO II model, estimate the effort required to build software that produces 12 screens, 10 reports and will require 80 3GL components. Assume that the complexity is difficult with weights as 3,8,10 respectively and the Productivity rate is 13.

The software is developed using component based development process model and hence 30% of the components are reused. 5

**4.** (a) Consider the given flow chart

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Answer the following:

a. Draw a Flowgraph for the above code. 4

b. Find the Cyclomatic complexity value from the Flowgraph. 2

c. Find all the independent paths forming the basis set. 4

(b) Under what circumstances Software Configuration Management (SCM) is needed? Describe briefly the various tasks supported by SCM? 5

(a) Explain Defect Amplification and Removal Model. 3

5. (b) In which phase of the SDLC, ER - Diagram and DFD are used? Discuss their importance. 3

(c) Write a short note on RMMM plan ? 3

(d) Differentiate between the following : 3*2=6

(i) Alpha testing and Beta testing

(ii) Software Reliability and Software Availability

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