



Name :

Roll No. :

Invigilator's Signature :

CS/B.Tech (ECE-N)/SUPPLE/SEM-8/EC-803A/2010

2010

SOFTWARE ENGINEERING

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$

i) Structured system development cycle approach includes
which of the following characteristics ?

- a) Top-Down b) Data Flow
- c) Data Structure d) None of these.

ii) Testing the software is basically

- a) verification
- b) validation
- c) verification & validation
- d) none of these.



iii) Mistakes, made in the requirements determinations stage shown up in

- a) system design
- b) implementation
- c) system development & testing
- d) none of these.

iv) A prototype refers to

- a) a working model of a proposed system
- b) the set of activities in a system
- c) the typical activities in a system
- d) all of these.

v) Waterfall model is not suitable for

- a) small projects
- b) complex project
- c) accommodating change
- d) none of these.

vi) Which of the following is not a tool for application prototyping?

- a) Third generation languages
 - b) Report generators
 - c) Screen generators
 - d) Application generators.
- vii) The most important software product characteristics can be
- a) quality
 - b) cost
 - c) schedule
 - d) all of these.
- viii) Which one is not a risk management activity ?
- a) Risk assessment
 - b) Risk control
 - c) Risk generation
 - d) None of these.
- ix) COCOMO-II estimation model is based on
- a) complex approach
 - b) algorithmic approach.
 - c) bottom up approach
 - d) top-down approach.



- x) Product quality is defined as
- a) Delivering a product with correct requirements
 - b) Delivering a product using correct development procedure
 - c) Delivering a product which is developed iteratively
 - d) Delivering a product using high quality procedures.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

2. What do you mean by economic and technical feasibility of a software project ? 5
3.
 - a) What are the main drawbacks of Prototype Model ?
 - b) Discuss Risk Analysis with respect to Spiral Model. 2 + 3
4.
 - a) Compare Validation and Verification.
 - b) What do you mean by the quality of Software. 3 + 2
5. What are the different cost driver parameters associated with Intermediate COCOMO Model ? 5
6. Discuss briefly McCabe's Cyclomatic Complexity Matric. 5



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following questions.

$$3 \times 15 = 45$$

7. a) Discuss classical waterfall model with proper diagram.

What are the main disadvantages of this model ?

- b) How the disadvantages of waterfall model be recovered by spiral model ? Discuss briefly different phases of spiral model.

- c) What are cohesion and coupling ? Explain. $6 + 6 + 3$

8. a) Define risk and risk management. Briefly explain.

- b) Why is Software Testing necessary ?

- c) Compare and contrast white box and black box testing.

$$5 + 5 + 5$$



9. a) Consider a project to develop a full screen editor. The major components identified are

- i) Screen edit
- ii) Command Language Interpreter
- iii) File input and output
- iv) Cursor Movement
- v) Screen Movement.

The size is for these are estimated to be 4K, 2K, 1K, 2K and 3K delivered source code lines. The following are the different significant cost driver values :

- i) Requirement Software Reliability = 1.15
- ii) Product Complexity = 1.15
- iii) Analyst Capability = 0.86
- iv) Programming Language Experience = 1.07

Use COCOMO Model to determine overall cost and Schedule Estimates.

- b) Discuss different types of software associated with COCOMO model. 10 + 5



10. a) What is DFD ? Compare and contrast logical and physical design.
- b) Describe different types of maintenance.
- c) What do you mean by alpha-testing, beta-testing and acceptance testing ?
- d) Explain the concept of COCOMO Model.

5 + 3 + 4 + 3

11. Write short notes on any *three* of the following : 3 × 5

- a) Spiral model
- b) Decision table
- c) Black Box Testing
- d) SRS.

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