

## ALCCS - NEW SCHEME

Time: 3 Hours

**FEBRUARY 2013**

Max. Marks: 100

*PLEASE WRITE YOUR ROLL NO. AT THE SPACE PROVIDED ON EACH PAGE IMMEDIATELY AFTER RECEIVING THE QUESTION PAPER.*

**NOTE:**

- Question 1 is compulsory and carries 28 marks. Answer any FOUR questions from the rest. Marks are indicated against each question.
- Parts of a question should be answered at the same place.

- Q.1**
- a. Define software product. Mention any four characteristics of software process models.
  - b. Explain the role of prototyping in software development. Give an illustration.
  - c. Discuss the importance of cohesion and coupling in software modularity.
  - d. Mention any four coding standards. Give an example for each.
  - e. Compare brute force and backtracking debugging approaches used in software engineering.
  - f. Discuss software reverse engineering and software reengineering.
  - g. Explain CPM project scheduling strategy. Give the advantages and disadvantages. (7×4)
- Q.2**
- a. Explain how the requirement process converts the client needs to validated Software Requirement Specification (SRS). (6)
  - b. Compare the requirement analysis using structured analysis model and object oriented analysis model. (6)
  - c. Discuss various checks and reviews in requirement validation. (6)
- Q.3**
- a. With the help of an example illustrate the Object oriented design methodology using UML. (6)
  - b. Explain various components of software design architecture. Give an example for illustration. (6)
  - c. Give applications of top-down and bottom-up design strategies. (6)

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- Q.4** a. Mention any six programming guidelines to be followed in software coding. (6)
- b. Compare the characteristic features of structured programming languages and object oriented programming languages. (6)
- c. Explain the following code verification techniques and give their limitations: (6)
- (i) Code Walk-Throughs
  - (ii) Code Inspections
- Q.5** a. Compare the following functional testing and give an example for each: (2×4.5)
- (i) Boundary value analysis
  - (ii) Cause effect graph technique
- b. Define the terms used in structural testing and give an example for illustration: (3×3)
- (i) Cyclomatic complexity
  - (ii) Deriving Test cases
  - (iii) Graph matrices
- Q.6** a. Explain various categories of software maintenance. Mention any four maintenance cost attributes. (5+4)
- b. Explain Software Configuration Management (SCM) process and standards. Mention the features of version control, change control and configuration audit used in SCM. (4+5)
- Q.7** a. Compare empirical and analytical project estimation techniques. Give their respective applications. (9)
- b. Explain features of COCOMO model. Give the expression to calculate effort (person months) and development time (months) in the basic COCOMO model. (9)