

ALCCS - NEW SCHEME

Time: 3 Hours

FEBRUARY 2012

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**(7 × 4)**

- a. What is Software Engineering?
- b. What does the Capability Maturity Model (CMM) determine?
- c. What is Defect Removal Efficiency (DRE)? What does it measure?
- d. What is object point? Discuss, whether it is a direct or indirect software measure?
- e. What is risk mitigation, monitoring and management?
- f. Explain software configuration management. Why is it important?
- g. What is MTTF (Mean Time To Failure) and MTBF (Mean Time Between Failure)?

Q.2

- a. State Boehm[98] spiral model. What are the advantages and disadvantages of spiral model? **(9)**
- b. What are the different measures of software quality? Discuss all such measures. **(9)**

Q.3

- a. Describe the difference between 'direct' and 'indirect' measure. **(6)**
- b. Compute the function point value for a project with the following domain characteristics:
No. of user inputs = 32
No. of user outputs = 60
No. of user inquiries = 24
No. of files = 08
No. of external interfaces = 02
Assume that all complexity adjustment values are average. **(6)**
- c. Describe various information gathering techniques in detail. **(6)**

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- Q.4** a. Describe the structure of SRS (Software Requirement Specification). (6)
- b. What is the effect on information hiding and coupling in a 'C' program that has
(i) static functions
(ii) extern variables (6)
- c. State the difference between black box testing and white box testing. (6)
- Q.5** a. Why is highly coupled module difficult to unit test? (3)
- b. Develop a small software tool that will perform a Halstead analysis on programming language source code of your choice. (9)
- c. Describe what is maintenance. Also categorize the various maintenance activities. (6)
- Q.6** You have been asked to build a web based order processing system for a computer store:
- (i) Develop an entity relationship diagram that describes data objects, relationships and attributes. (6)
- (ii) Develop a context-level model for the system. (3)
- (iii) Develop a level-1 DFD for the system. (6)
- (iv) Develop a data dictionary for the system. (3)
- Q.7** Write short notes on any **THREE** of the following:-
- (i) Software reliability and availability
- (ii) Use cases and anchors.
- (iii) Prototyping model and Evolutionary development model.
- (iv) Cohesion and coupling. (6×3)