**(Following Paper ID and Roll No. to be filled in your Answer Book)**

**PAPER ID : 2145**            **Roll No.** ⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚⬚

## MCA
### (SEMESTER-V) THEORY EXAMINATION, 2012-13
## SOFTWARE ENGINEERING

*Time : 3 Hours ]*                                        *[ Total Marks : 100*

### Section – A

1.  Attempt **all** question parts :                          $10 \times 2 = 20$

    (a)  List out the characteristics of software engineering.

    (b)  Compare the software engineering processes with the conventional engineering processes.

    (c)  Mention the difficulties in elicitation.

    (d)  State SQA.

    (e)  How can you represent the Architectural Design ?

    (f)  Enlist the various types of coupling.

    (g)  Distinguish between alpha and beta testing.

    (h)  What are the testing principles needed for performing the software testing ?

    (i)  Classify the various types of software maintenance.

    (j)  Define Software Project Management.

### Section – B

2.  Attempt any **three** question parts :                    $10 \times 3 = 30$

    (a)  Write a detailed note on the following :
         (i)   SEI-CMM model
         (ii)  Entity Relationship Diagrams

    (b)  Illustrate about the software development life cycle.

    (c)  Elucidate about Top Down and Bottom Up Design.

    (d)  Explain any two methods of Black Box Testing.

    (e)  Use the COCOMO II model to estimate the effort required to build software for a simple ATM that produces 12 screens, 10 reports and will require approximately 80 software components. Assume average complexity and average developer/environment maturity. Use the application composition model with object points.

## Section – C

Attempt **all** questions.                                                           $10 \times 5 = 50$

3.  Attempt any **two** parts :                                                      $5 \times 2 = 10$

    (a)  Elaborate on the Pseudo codes.

    (b)  Give a brief note on function Oriented Design.

    (c)  Illustrate about control flow graphs.

4.  Attempt any **one** part :                                                       $10 \times 1 = 10$

    (a)  Give a detailed account for the prototype model.

    (b)  Describe the Iterative enhancement model.

5.  Attempt any **one** part :                                                       $10 \times 1 = 10$

    (a)  State the SRS for the library management system. Find the cyclomatic complexity
         for the book issue module and write sample test for the same system.

    (b)  Narrate the roles and activities of SQA group in a software project.

6.  Attempt any **one** part :                                                       $10 \times 1 = 10$

    (a)  A program reads three integer values. The three values are interpreted as
         representing the lengths of the sides of a triangle. The program prints a message
         that states whether the triangle is scalene, isosceles or equilateral. Develop a set of
         test causes that you feel will adequately test this program.

    (b)  Enumerate about the Code Inspection.

7.  Attempt any **two** parts :                                                      $5 \times 2 = 10$

    (a)  What are the needs for software maintenance and explain about perfective
         maintenance ?

    (b)  Describe about software reengineering process model.

    (c)  Suppose you are the project manager for a major software company. You have
         been asked to lead a team that is developing 'next generation' word processing
         software. Create a risk table for the project.

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