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

PAPER ID : 2145   **Roll No.** [ ][ ][ ][ ][ ][ ][ ][ ][ ][ ]

M.C.A.

(SEM. V) THEORY EXAMINATION 2011-12

SOFTWARE ENGINEERING

Time : 3 Hours   *Total Marks : 100*

Note :– (1)   Attempt **all** questions.

(2)   All questions carry equal marks.

1.   Attempt any **two** of the following :   **(10×2=20)**

(a)   (i)   What do you mean by term 'Software Engineering' ? Discuss it.

(ii)   What are the responsibilities and challenges of Software Engineers ?

(b)   Explain the waterfall process model. Discuss the different phases of it.

(c)   (i)   Discuss the prototype model. Under what circumstances it is beneficial to develop a prototype model ?

(ii)   Discuss the characteristics of software contrasting it with the hardware.

2. Attempt any **two** of the following : (10×2=20)

(a) Draw a overall DFD for Issue/Return of a books in a Library. Clearly describe the working of the system and mention all assumptions made by you.

(b) (i) Discuss the organisation of a software requirements specification.

(ii) Why is SRS document also known as the black-box specification of a system ?

(c) Discuss the following :

(i) Entity Relationship Diagrams

(ii) Software Quality Attributes.

3. Attempt any **two** of the following : (10×2=20)

(a) Discuss the concepts of the cohesion and coupling of software design and also explain the different types of coupling and cohesion.

(b) What do you mean by a good software design ? Also discuss the criteria for a software design to enhance the quality of a software.

(c) Discuss the following with suitable examples :

(i) Object oriented design

(ii) Halestead's Software Science.

4. Answer any **two** of the following : (10×2=20)

   (a) (i) What are the objectives of software testing ? Discuss.

      (ii) Distinguish between the verification and validation testing with examples.

   (b) (i) How is cyclomatic complexity useful in program testing ? Discuss.

      (ii) What do you understand by the term integration testing ? Discuss the importance of integration testing.

   (c) Briefly discuss the following :

      (i) Code inspection and Code walk-through

      (ii) Black Box Testing.

5. Attempt any **two** of the following : (10×2=20)

   (a) (i) What are the activities involved in reengineering of the software ? Discuss.

      (ii) What do you mean by software maintenance ? Why does the software need maintenance ?

   (b) What do you mean by software risk ? Discuss the risk management activities during the software development.

   (c) Write notes on Constructive Cost Models (COCOMO).