Subject Code—6765-Y

M. Sc. (CS)/M.C.A. EXAMINATION

(Third Semester)

(MCA 3 Years)

(Re-appear Batch Prior to 2009)

MS-12

SOFTWARE ENGINEERING

Time : 3 *Hours*   *Maximum Marks* : 100

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) Differentiate between Software Engineering and Traditional Engineering. Why is software engineering difficult than traditional engineering ? Explain briefly.

   (b) "Software unlike hardware does not wear and tear." Justify the statement.

2. (a) Explain the major issues involved with estimate of Function Point. Why are function points important at Loc ? Explain briefly.

   (b) What is the significance of McCabe's cyclomatic number ? What are the characteristics of this number ? Explain with the help of a suitable example.

3. (a) What are the basic design principles ? Is it possible to satisfy all design principles ? Justify your answer.

   (b) Distinguish between ER diagram and DFD. Draw a DFD of any suitable example as per your choice.

4. (a) Define cohesion and coupling. What problems are likely to occur if two ore more modules have high coupling and a module has less cohesion ? Explain briefly.

   (b) What are the McCall's software quality factory ? Explain briefly.

5. (a) What is Software Testing ? What are the *main objectives of software testing* ? When the role of software testing starts in software life cycle ?

(b) Compare functional testing and structural testing. Why do we require these two types of testing ? Illustrate important structural testing techniques.

6. (a) What do you understand by Software Quality Assurance ? Explain few software quality assurance tools.

(b) Explain briefly various process quality metrics and product quality metrics.

7. (a) Compare :

(i) Validation and Verification

(ii) Gant chart and PERT chart

(iii) Process and Product metrics.

(b) List out various reliability metrics with various application areas.

8. (a) Write short notes on the following :

      (i)   Role of testing in Quality

      (ii)   Test Plan

      (iii) Prototype.

   (b) Why does software fail after it has passed acceptance testing ?