Roll No. ....

Subject Code—6761-X

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

(Third Semester)

(MCA 3 Years)

(Main/Re-appear Batch 2009)

MS-12

SOFTWARE ENGINEERING

Time : 3 Hours   *Maximum Marks : 70*

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.

    10

    (b) "Software unlike hardware does not wear and tear." Justify the statement. **4**

2. (a) Explain the major issues involved with estimate of Function Point. Why are function points important at Loc ? Explain briefly. 7

(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. 7

3. (a) What are the basic design principles ? Is it possible to satisfy all design principles ? Justify your answer. 7

(b) Distinguish between ER diagram and DFD. Draw a DFD of any suitable example as per your choice. 7

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. 7

(b) What are the McCall's software quality factory ? Explain briefly. 7

(a) What is Software Testing ? What are the main objectives of software testing ? When the role of software testing starts in software life cycle ? 7

(b) Compare functional testing and structural testing. Why do we require these two types of testing ? Illustrate important structural testing techniques. 2+1+4=7

(a) What do you understand by Software Quality Assurance ? Explain few software quality assurance tools. 2+6=8

(b) Explain briefly various process quality metrics and product quality metrics. 6

(a) Compare :

(i) Validation and Verification

(ii) Gant chart and PERT chart

(iii) Process and Product metrics.

4×3=12

(b) List out various reliability metrics with various application areas. 2

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

      (i)   Role of testing in Quality

      (ii) Test Plan

      (iii) Prototype.   12

   (b) Why does software fail after it has passed acceptance testing ?   2