Roll No. .....

Subject Code—607

M.C.S. EXAMINATION

(Third Semester)

MS-12

SOFTWARE ENGINEERING

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

Note : Attempt any *Five* questions.

1. (a) What is software engineering ? Discuss the use and role of software engineering in software development process. **5**

(b) Illustrate the role of customer's requirements in the software engineering. **5**

(c) What do you understand by term life-cycle model of software development ? Describe the generic Waterfall Model. **10**

2. (a) Describe Bohem's COCOMO model for cost estimation. **10**

(b) Define software metrics. Explain the concept of function point. List out the advantages of FP over LOC. Why FPs are becoming acceptable in industries ? **10**

3. (a) What is meant by Software Quality ? Why is it getting much attention now-a-days ? Explain various McCall's Software quality parameters. **12**

(b) Compare :

(i) Top-down and Bottom-up approach

(ii) Structure Chart and Flow chart

(iii) Software Reliability and Hardware Reliability

(iv) Verification and Validation. **4×2=8**

4. (a) What is Coding ? Discuss some important elements of programming style. **8**

(b) How are the concepts of cohesion and coupling useful in arising at good software design ? Explain briefly. Enumerate different types of cohesion and coupling. **12**

5. (a) Why is it desirable to have detailed design phase ? Why not go directly from architectural design to coding ? Explain. **10**

(b) Write a subroutine for binary search and draw CGF. Find all independent paths. **10**

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

(b) What are the various levels of testing ? Explain briefly. Why do we require various levels of testing ? **15**

7. (a) What are the various reliability metrics ? State their significance. **5**

(b) Define the terms Fault. Failure. Errors. Why is software reliability said to be relative term ? Justify. 5

(c) Describe JM reliability model. What are the characteristics of a good reliability model. 10

8. Write short notes on the following :

(a) TEST tools

(b) PERT Chart

(c) GHANT Chart

(d) Size metrics

(e) Data dictionary. 5×4=20