M. Sc. / MCA 5th Semester Examination,

January–2009

SOFTWARE TESTING AND QUALITY
ASSURANCE

Paper–MCA–22

Time allowed : 3 hours]   *[Maximum marks : 75*

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

1. (a) What do you understand by software capability maturity model ? Provide its structure and illustrate significance of each element.

   (b) What are ISO quality standards for software ? Discuss their essence and usefulness.

2. Differentiate between the following :

   (i) Defect testing and Seeding technique

   (ii) Hardware and Software Reliability

   (iii) Glass-box testing and Black-box testing

3. (a) What are software quality standards ? Why are these needed ? Illustrate.

   (b) What do you understand by hazard analysis ? Outline its objectives and also indicate the general threats applicable to the software design.

4. (a) What do you mean by automated software testing tools ? Outline purpose and usefulness of some important such tools.

(b) What is debugging ? What are various debugging techniques ? Illustrate the principal differences among these.

5. (a) What is meant by object-oriented testing (OOT) ? What are various OOT methods ? Illustrate each, stating their usefulness.

(b) What is fault-free software ? Discuss the characteristics of fault-free software.

6. Differentiate between the following :

(a) Static analysis and dynamic testing

(b) Stress testing and Load testing

(c) Defect testing and Seeding technique

7. (a) What are various software quality metrics ? Outline the importance of each.

(b) What are test data generators ? Illustrate their importance in software testing.

(c) What do you mean by software safety ? Discuss its significance.

8. (a) What is software quality assurance (SQA) plan ? What are the activities involved in SQA plan ? Discuss.

(b) What do you mean by software testing strategy ? Outline the characteristics of a good software testing strategy and also discuss the strategies involved in integration testing.

18493–2,250