Subject Code—2015

M.C.A. (Third Year) EXAMINATION

(Five Year Integrated Course)

SOFTWARE ENGINEERING

MCA-303

Time : 3 Hours   *Maximum Marks : 100*

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

1. (a) How are software faults and failures inter-related ? What are different types of software failure ? Also outline the characteristics of fault-free software.

   (b) What is coding ? Discuss various coding conventions followed while writing programs.

2. (a) What is software testing ? How is testing important in software life-cycle ? Discuss the objectives of software testing.

(b) What do you mean by modularity ? Discuss coupling and cohesion types along with example of each.

3. (a) What is software project planning ? Outline the goals of software project planning as well as the activities involved in software project planning.

(b) What are software metrics ? Why are these needed ? Also discuss the uses of software metrics.

4. (a) What is software engineering ? Discuss the principles of software engineering as well as the essential characteristics of a well engineered software product.

(b) What do you mean by software life-cycle models ? Discuss the essence of software life-cycle models.

5. (a) What is software reliability ? What characteristics of software make software reliability different from hardware reliability ? Discuss.

   (b) Differentiate between the following :

   (i) Black-box and White-box testing

   (ii) Unit testing and Integration testing.

6. Differentiate between the following :

   (a) Good design and Bad design

   (b) Function point and token Metrics

   (c) McCabe's Cyclomatic and Knots Metrics.

7. (a) What are CASE tools ? Discuss various types of case tools indicating their respective usefulness.

   (b) Differentiate between product and process metrics.

8. (a) What is software quality ? What are important software quality attributes? Explain.

   (b) What is software design ? Discuss the design principles in detail.