B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2010

Fourth Semester

Information Technology

IT2251 — SOFTWARE ENGINEERING AND QUALITY ASSURANCE

(Regulation 2008)

Time: Three hours   Maximum: 100 Marks

Answer ALL Questions

PART A — (10 × 2 = 20 Marks)

1. What are the different phases of Software Engineering?

2. Define Software process model.

3. Why is requirements elicitation process difficult?

4. What is the notation used by functional modeling?

5. How is functional independence measured?

6. When is transaction mapping applied?

7. What are 'side effects' while debugging?

8. When is orthogonal array testing applicable?

9. Why LOC is not treated as a standard metric?

10. What are baseline criteria in SCM?

PART B — (5 × 16 = 80 Marks)

11. (a) (i) How are software myths affecting software process? Explain with the help of examples. (Marks 2 + 6 = 8)

(ii) Discuss major areas of the applications of the software. (Marks 8)

Or

(b) (i) Describe the role of management in software development with the help of examples. (Marks 8)

(ii) How do 'Project risk' factors affect the spiral model of software development? (Marks 8)

12. (a) What are prototyping techniques? How are prototype models prepared for a software process? Discuss. (Marks 3 + 3 +10)

Or

(b) Describe the structure of software requirements specification documents explaining clearly the standards to be followed. Write a typical SRS for

bank transaction. (Marks 8 + 8)

13. (a) (i) What are the characteristics of good design? Describe the different types of coupling and cohesion. How is design evaluation
performed? (Marks 3 + 4 + 3)
(ii) State the effects of coupling and cohesion in software quality. (Marks 6)
Or
(b) (i) Why is UID critical for highly interactive software? How is the real time software design performed for a long term software project?
(Marks 2 + 4 + 4)
(ii) Write down the software design procedures for Data Acquisition and control system. (Marks 6)

14. (a) (i) Enumerate the various types of software test. Which type of testing is suitable for boundary condition? Justify. (Marks 2 + 6)
(ii) How do you relate software testing results with reliability of the product? Explain. (Marks 8)
Or
(b) (i) Explain software implementation techniques. What is the percentage in total cost of the project? How do you expedite the implementation stage? (Marks 6 + 2)
(ii) What is meant by control flow testing? ''Is it always falling with data flow testing in case of software''? Justify.

15. (a) State the need for software quality planning and control. How do you assess the process and product quality of software? Write the quality assurance standards. (Marks 4 + 6 + 6)
Or
(b) Write short notes on:
(i) SCM. (Marks 4)
(ii) Software cyclomatic complexity metric. (Marks 6)
(iii) Software cost estimation. (Marks 6)