B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2011

Fourth Semester

Information Technology

IT 2251 – SOFTWARE ENGINEERING AND QUALITY ASSURANCE

(Regulation 2008)

Time : Three hours   Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by Independent Verification and Validation?

2. Differentiate Waterfall model with V-Model.

3. Name the components of CASE tools for structured methodology.

4. List the steps involved in requirements elicitation and analysis.

5. What is meant by heuristic evaluation?

6. List out the steps involved in real time software design.

7. What is meant by Boundary value analysis?

8. Define the term process maturity.

9. Name any four quality control tools.

10. State the benefits of QFD.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Describe the process model which defines a network of activities. (8)

(ii) State as to why the first system is always a throw away system? Explain the concept with advantages and disadvantages. (8)

Or

(b) (i) Draw a system engineering hierarchy diagram and explain the concept. (8)

(ii) Explain the process model that combines the elements of waterfall and iterative fashion. (8)

12. (a) Give a brief description of software prototyping and briefly discuss the various prototyping techniques. (16)

Or

(b) With an example describe the three process steps for transforming a dataflow diagram to a structure chart. (16)

13. (a) (i) Draw a translating diagram for analysis model into a software design Specification. (8)

(ii) Give a complete template for documentation design specification. (8)

Or

(b) (i) Which is a measure of interconnection among modules in a program structure?Explain. (8)

(ii) What is the difference between Level-0 and Level-1 DFD? Draw a Level-0 and Level-1 DFD for safe Home Security System. (8)

14. (a) (i) What are all the formulas for cyclomatic complexity? Calculate cyclomatic Complexity for greatest of three numbers. (8)

(ii) How would you derive test cases for the given project? Explain in detail. (8)

Or

(b) (i) Narrate the path testing procedure in detail with a sample code.(8)

(ii) Explain the different integration testing approaches. (8)

15. (a) Explain how software process assessment helps software organizations to improve themselves. (16)

Or

(b) Write detailed notes on ISO9000 series of quality management standards. (16)