2011

MCA

5th SEMESTER EXAMINATION

SOFTWARE ENGINEERING

PAPER—3502

Full Marks : 100

Time : 3 Hours

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

Illustrate the answers wherever necessary.

Answer Q. No. *1* and any *four* from the rest.

1. (a) What do you mean by balancing a DFD. Illustrate with a suitable example. 4

(b) Consider a student admission system for XYZ university, which is to be automated. For this system make DFDs upto level 3, also with the context diagram. Also draw an ERD for the same. Sate your assumptions. 7+3

2. (a) Software engineering can be viewed as a layered technology. Explain. 4

   (b) Explain the steps carried out in the prototyping model. How is the waterfall model different from the prototyping model ? 6+4

3. (a) Write a short notes on : Organic project, embedded project and semi-detached project. 3×2

   (b) The COCOMO model is based on the hierarchy of three models, namely Basic model, intermediate model and complete or Advance model Explain them. 3+3+2

4. (a) Discuss the significance and use of requirement engineering. What are the problems in the formulation of requirements. 3+4

   (b) What are the different components of SRS. Discuss the characteristics of a good SRS document. 3+4

5. (a) What do you mean by the terms 'cohesion' and 'coupling' in reference to software design ? Is it true

that in a good design, the modules should have high cohesion and low coupling? Why? 3+4

(b) Explain the two different design approaches. Also mention any two important differences between them. 5+2

6. (a) What do you mean by the term "risk". What are the different types of risk that may occur during the development of a software? 1+6

(b) What do you mean by "Software configuration" and "Software configuration management". What role does the CCB (Configuration Control Board) play in Software Configuration Management? 2+2+3

7. (a) What is testing? Is it beneficial to allow users to test a software before finally accepting it? If yes, why? Explain the testing through which the user test a software. 2+3+3

(b) What are White box testing and Black box testing ? Explain the difference between them. 3+3

8. (a) Write short notes on : (any *three*) 3×3

(i) SPMP ;

(ii) Mutation testing ;

(ii) Software reliability metrics ;

(iv) Functional and Non-functional requirement ;

(v) Maintenance.

(b) What is documentation ? Why is it needed ? 2+3

Internal Assessment — 30

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