2017

MCA

5th Semester Examination

SOFTWARE ENGINEERING

PAPER—MCA 502

Subject Code—32

Full Marks : 100

Time : 3 Hours

The figures in the right hand 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 any *five* questions.   5×14

1. (a) What is prototype ? Under what circumstances is it beneficial to construct a prototype ? Mention the different activities carried out in prototyping model of software development.   1+2+5

   (b) Compare the relative advantages of different models of software development.   6

2. (a) What are the different categories of software development projects according to COCOMO estimation model? Explain how cost is calculated using COCOMO model.

3+5

(b) Assume that the size of a software product has been estimated to be 32,000 lines of source code. Also assume that the average salary of software engineers is Rs. 15,000 per month. Determine the effort required to develop the software product, the nominal development time and the cost of the software product. (Determination should be done for all categories of software product). 6

3. (a) Why is software configuration management crucial to the success of large software product development? How can you manage software configuration? 3+4

(b) What is Risk? Explain the different activities carried out in managing risks. 1+6

4. (a) As an analyst of a large software development project, what would be the organization of your SRS document? Mention the desirable characteristics of a good SRS document. 3+5

(b) What do you mean by the terms Cohesion and Coupling ? Is it true that in a good design, the modules should have high cohesion and low coupling ? why ?   3+3

5. (a) What is structure chart ? Mention the different components of structure chart.   2+6

   (b) Draw a structure chart of the below DFD of a Tic-Tac-Toe computer game.   6
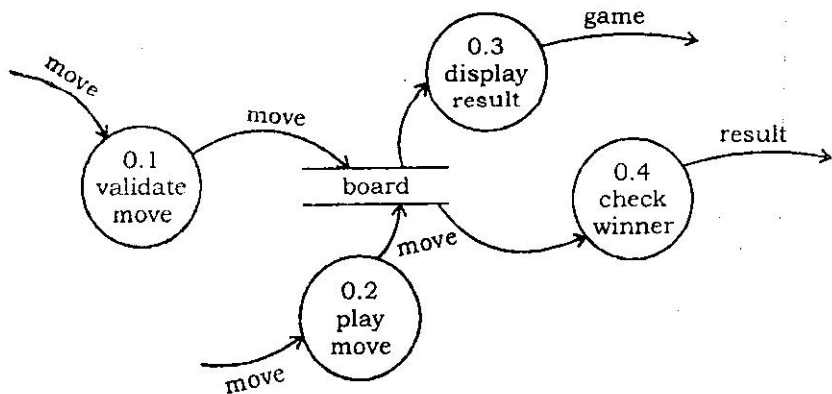

Fig : Level 1 DFD

6. (a) What do you understand by the term software testing ? What are the different kinds of software testing that are usually performed on large software products ?

                1+6

(b) What is Mccabe's **Cyclomatic Complexity** metric ? How can you compute **the cyclomatic** complexity of a program ? 1+6

7. Write short notes on (any *two*) : 2×7

   (a) Function point metrics ;

   (b) Software Maintenance ;

   (c) Black box testing ;

   (d) DFD ;

   (e) Emperical Cost Estimation.

[Internal Assessment : 30 Marks]

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TB--150