

Roll No. ....

Total Pages : 2

**MCA/DX**

**5519**

**SOFTWARE ENGINEERING**

**Paper : MCA-104**

**Time : Three Hours]**

**[Maximum Marks : 80**

**Note :** Question No. 1 is compulsory. In addition to the compulsory question, attempt *four* more questions, selecting *one* question from each unit.

1. Write short notes on the following :

- (i) ISO-9001.
- (ii) SEI-CMM.
- (iii) PERT chart.
- (iv) Characteristics of SRS.
- (v) Design abstraction.
- (vi) Defensive programming.
- (vii) Mutation testing.
- (viii) Regression testing.

**UNIT-I**

2. Out of these models

- (i) Waterfall model,
- (ii) Prototype model,
- (iii) Spiral model,

which is more suitable ? Why ? Discuss Prototype model in detail.

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[P.T.O.

- 3. (a) What are various Software metrics ? Which one may give accurate results and why ?
- (b) Compute the Function Count Value for a project for the following characteristics :

No. of using inputs : 40  
No. of using outputs : 2 times of inputs  
No. of enquires : 1/2 times of outputs  
No. of files : Nil  
No. of external interfaces : 02.  
Assume that all complexity factors are average.

**UNIT-II**

- 4. What do you mean by Cost estimation ? What are the main factors used in cost model ? Explain COCOMO model with the help of a numerical example with your own perception.
- 5. Discuss various Project management activities in details with examples.

**UNIT-III**

- 6. Discuss different types of coupling between two modules and different types of cohesion in a module. What are their significance to discuss during design phase ?
- 7. Explain Musa model and JM-model for software reliability.

**UNIT-IV**

- 8. (a) Explain Software maintenance process.  
(b) Differentiate between error, fault and failure.
- 9. Explain the concept of Black box testing and White box testing. What are the different black box and white box techniques ?

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