

(i) Printed Pages : 3

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(ii) Questions : 9

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Exam. Code : 

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**M.Sc. Information Technology 1<sup>st</sup> Semester**

**(2123)**

**SOFTWARE ENGINEERING**

**Paper-MS-61**

**Time Allowed : Three Hours]**

**[Maximum Marks : 80**

**Note :—** Attempt **FIVE** questions in all, selecting **ONE** question each from Units-I, II, III and IV. Unit-V is compulsory to attempt.

**UNIT-I**

1. (a) What is Prototyping model ? Explain with the help of suitable example. 8
- (b) What is a DFD ? How is DFD used to perform system analysis ? 8
2. (a) What are the characteristics of SRS ? How to design SRS ? 8
- (b) Discuss Agile modelling with the help of suitable example. 8

**UNIT-II**

3. (a) What is Structured Design ? Explain important concepts of Structured Design. 8
- (b) Discuss basic COCOMO model to estimate development effort. 8

4. (a) Discuss important principles of Object-Oriented Design. How is this design different from Function-Oriented Design ? 8
- (b) Discuss Critical Path Method (CPM) with the help of suitable example. 8

### UNIT-III

5. (a) What is the role of metrics and measurements in software engineering ? Explain People metrics. 8
- (b) What do you understand about Software Maintenance ? What are different types of maintenance ? 8
6. (a) Discuss Process and Project metrics. How are they useful ? 8
- (b) Differentiate between Software Reliability and Hardware Reliability. Discuss Software Reliability metrics as well. 8

### UNIT-IV

7. (a) Discuss Basis Path testing with the help of an example. 8
- (b) Discuss Unit and Integration testing with the help of suitable examples. 8
8. (a) What do you understand by Black-box testing ? Discuss Boundary Value analysis with the help of an example. 8
- (b) What is Object-oriented testing ? Discuss its characteristics. 8

## UNIT-V

9. (a) Give two goals of software engineering. 2
- (b) What is the difference between E-R diagram and DFD ? 2
- (c) Name the elements of User Interface Design. 2
- (d) What are software risks ? Give example. 2
- (e) What are People metrics ? Give example. 2
- (f) Name two factors that affect software reliability. 2
- (g) What is White Box testing ? Give example. 2
- (h) What do you understand by Alpha testing ? 2