III Semester Examination, April-2021
M.Sc.

INFORMATION TECHNOLOGY

Paper III

(Software Engineering)

Time : 3 Hours]   [Maximum Marks : 100

Note : *All questions are compulsory. Question Paper comprises of 3 sections.* **Section A** *is objective type/Multiple Choice questions with no internal choice.* **Section B** *is short answer type with internal choice.* **Section C** *is long answer type with internal choice.*

SECTION 'A'
(Objective Type Questions)

Choose the correct answer :   **1 × 10 = 10**

1. Efficiency in a software product does not include :

   (a) responsiveness   (b) processing time

   (c) licensing   (d) memory utilization

2. Software is :

   (a) documentation and configuration of data

   (b) set of programs

   (c) set of programs, documentation and configuration of data

   (d) All of the above

3. SDLC stands for :

   (a) System design life cycle

   (b) System development life cycle

(c) Software design life cycle

(d) Software development life cycle

4. The spiral model has two dimensions namely :

(a) diagonal, perpendicular

(b) radial, angular

(c) diagonal, angular

(d) radial, perpendicular

5. What DFD notation is represented by the rectangle ?

(a) Transform   (b) Function

(c) Data store   (d) None of the above

6. In size oriented metrics, metrics are developed based on the :

(a) number of lines of code

(b) number of user inputs

(c) amount of memory usage

(d) number of functions

7. Debugging is :

(a) finding and correcting errors in the program code

(b) identifying the task to be computerized

(c) creating the algorithm

(d) creating program code

8. What is cyclomatic complexity ?

(a) Green box testing

(b) Black box testing

4. What is user testing ? Explain all stages of testing process.

Or

Write notes on the following :

(a) Alpha and Beta Testing,

(b) Cyclomatic complexity.

5. What is Risk ? Explain the various types of risks with examples.

Or

With the help of diagram, explain the activities involved in re-engineering process.

✪ ✪ ✪ ✪ ✪ c ✪ ✪ ✪ ✪ ✪

(c) Yellow box testing

(d) White box testing

9. Which of the following risk is the failure of a purchased component to perform as expected ?

(a) Programming risk (b) Project risk

(c) Product risk   (d) Business risk

10. Which one is not a stage of COCOMO-II ?

(a) Application composition estimation model

(b) Comprehensive cost estimation model

(c) Post architecture estimation model

(d) Early design estimation model

SECTION 'B'   6 × 5 = 30
(Short Answer Type Questions)

Note : *Answer the following questions in 250 words.*

1. Explain waterfall model for software life cycle.

Or

State and explain the principle of agile methods.

2. Explain the various types of coupling.

Or

Define design. Discuss the characteristics of good design.

3. Discuss various software metrics available for coding.

Or

Explain the scope and architecture of case tool.

4. Why testing is important with respect to software ?

Or

Distinguish between varification and validation.

5. Define maintenance. Explain the process of maintenance with the help of diagram.

Or

Explain the COCOMO-II estimation model.

SECTION 'C'   12 × 5 = 60
(Long Answer Type Questions)

Note : *Answer the following questions in 500 words.*

1. Explain software development life cycle in detail.

Or

Explain spiral model with example. Write the advantages and disadvantages of spiral model.

2. Explain about object-oriented analysis and design principle.

Or

Write short notes on the following :

(a) DFD,

(b) E-R diagram,

(c) Decision tables.

3. Explain different types of software standards and mention their importance.

Or

Discuss software quality attributes.