MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : CS-701

SOFTWARE ENGINEERING

Time Allotted : 3 Hours *Full Marks* : 70

The figures in the margin indicate full marks.

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

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$

i) The most important feature of spiral model is

a) Requirement analysis

b) Quality management

c) Risk mangement

d) Configuration management.

ii) To achieve good design, modules should have

a) Low coupling, low cohesion

b) Low coupling, high cohesion

c) High coupling, low cohesion

d) High coupling, high cohesion.

iii) Equivalence class partitioning is followed in

a) White box testing

b) Black box testing

c) Both (a) and (b)

d) None of these.

iv) Project planning does not include

a) Risk identification

b) Design

c) Cost estuation

d) Configuration Management.

v) A COCOMO model is

a) Common cost estimation model

b) Complete cost estimation model

c) Constructive cost estimation model

d) Comprehensive cost estimation model.

vi) Each time a defect gets detected and fixed, the reliability of a software product

a) decreases

b) increases

c) remains constant

d) cannot say anything.

vii) All critical path activities have slack time of

a) 0 b) 1

c) 2 d) None of these.

viii) Alpha and Beta testing are forms of

a) Acceptance testing

b) System testing

c) Integration testing

d) Unit testing.

ix) In function point analysis the number of adjustment factors based on system characteristics to refine unadjusted function point is

a) 12 b) 10

c) 20 d) 14.

x) CASE Tool is

a) Computer Aided Software Engineering

b) Component Aided Software Engineering

c) Constructive Aided Software Engineering

d) Computer Analysis Software Engineering.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following 3 × 5 = 15

2. Discuss the characteristics of a good SRS document.

3. Explain in detail the Capability Maturity Model (CMM).

4. What is the difference between black-box and white-box testings ?

5. List three common types of risks that a typical software project might suffer from.

6. Draw the use case diagram of a library management system.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 15 = 45

7. a) What is software engineering ? 3

   b) Discuss the software engineering process. 5

   c) Explain waterfall model in detail with the help of diagram. State its advantage and also its limitations. 7

8. a) Draw the E-R diagram for a hospital management. 5

   b) What do you mean by the term 'requirement' ? Explain the process of determining the requirements for a software based system. 7

   c) Describe the various steps of requirements engineering. Is it essential to follow these steps ? 3

9. a) Discuss the limitations of testing. Why do we say that complete testing is impossible ? 7

   b) What are the various kinds of function testing ? Describe any one in detail. 5

   c) Explain the boundary value analysis testing technique with the help of an example. 3

10. a) Define module coupling and explain different types of coupling. 8

    b) What is the difference between a flow chart and a structure chart ? 4

    c) List the points of a simplified design process. 3

11. a) What is software failure ? How is it related with fault ? 6

    b) What is software reliability ? 4

    c) Explain the Boehm software quality model with the help of a block diagram. 5

12. Write short notes on any *three* of the following : 3×5

a) Waterfall Model

b) Cyclomatic Complexity

c) COCOMO Model

d) Software Re-engineering

e) DFD.