Seat No. : _____

DA-102

December-2025

M.Sc. (CA & IT), Sem.-V

DSC-C-IMSCIT-351T : Software Systems Analysis and Engineering

Time : 2:00 Hours] **[Max. Marks : 50**

1. In a book club, members and non-members receive different discounts when purchasing books : **10**
   - If the buyer is a member, they receive a 10% discount.
   - If the buyer is a member and the purchase amount is more than ₹ 1,000, they receive 15% instead.
   - If the buyer is not a member, they normally receive no discount.
   - However, if a non-member spends more than ₹ 1,000, they receive a 7% discount.

   Develop decision table, decision tree or present it with structured English.

OR

1. (1) Start **10**
   (2) Read X
   (3) IF X > 0 THEN
   (4) Print "Positive"
   (5) ELSE
   (6) IF X = 0 THEN
   (7) Print "Zero"
   (8) ELSE
   (9) Print "Negative"
   (10) ENDIF
   (11) ENDIF
   (12) Stop

   For the given code
   (1) Draw A program (control) flow
   (2) Calculate Cyclomatic Complexity (CC) using 3 formulas
   (3) Find and make a list of the independent paths

2. Attempt any **two** : **10**

(a) What is architecture ? Explain architectural styles with figure

(b) Define Software Maintenance. Explain Types of Software Maintenance

OR

2. Attempt any **two** : **10**

(a) Explain Risk management process with figure

(b) Explain Spiral model with figure

3. Attempt any **two** : **10**

(a) Explain Scrum process flow with figure.

(b) Explain Black box testing with example of testing techniques.

OR

3. Attempt any **two** : **10**

(a) Explain COCOMO with formula for estimation.

(b) Explain briefly Three Golden Rule of Interface design.

4. Attempt any **two** : **10**

(a) Explain Requirement Elicitation Techniques.

(b) Define the concept of system analyst. What are the interpersonal and technical skills that an analyst should have ?

OR

4. Attempt any **two** : **10**

(a) Define Design, Explain Characteristics as a guide for good design.

(b) Explain TPS and MIS with Example.

5. Attempt any **five** of the following : **10**

(a) Explain in brief scheduling

(b) Explain in brief DFD

(c) Explain in brief Verification

(d) Explain in brief Stress testing

(e) Explain in brief Beta testing

(f) Explain Use-Case diagram in brief