

F-4879

Sub. Code

7BITA3

**U.G. DEGREE EXAMINATION, APRIL 2021 &
Supplementary/Improvement/Arrear Examinations**

Information Technology

Allied – DISCRETE MATHEMATICS

(CBCS 2017 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. What are atomic statements?
2. What is tautology?
3. Define elementary sum.
4. What is conjunctive normal form?
5. Define graph.
6. What is cycle in graph?
7. Define cut set and cut vertices.
8. What is meant by spanning tree?
9. What is meant by equivalence relation?
10. Define Lattice.

Part B

(5 × 5 = 25)

Answer **all** questions choosing either (a) or (b).

11. (a) Mention different connectives with truth tables.

Or

- (b) What are the rules to generate well formed formula?

12. (a) Write a short note on open statements with example.

Or

- (b) Describe the principles of normal form.

13. (a) Write short note on connectedness in graph.

Or

- (b) Describe the following statements with example

(i) Paths

(ii) Edges

14. (a) Discuss about Hamiltonian graph with neat diagram.

Or

- (b) Narrate Dijkstra's algorithm with suitable example.

15. (a) Write short note on partial ordering and posets.

Or

- (b) Describe about sub lattices and special lattices.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain about conditional and compound statements with suitable example.
17. Write a brief note on theory of inference for predicate calculus.
18. Discuss about complete graph with suitable example.
19. Enumerate the Prim's algorithm with suitable example.
20. Describe different properties of Binary relation in a set and Boolean algebra.