Hall Ticket No.: | | | | | | | | | | |

SRIT R19

SRINIVASA RAMANUJAN INSTITUTE OF TECHNOLOGY

(AUTONOMOUS)

II B. Tech I Sem – Semester End Examinations – Supplementary – Jun 2023

DISCRETE MATHEMATICS

[194GA05301]

(Computer Science & Engineering)

Time: 3 hours **Max. Marks: 70**

PART-A

(Compulsory Question)

***

1 Answer the following: (10 X 02 = 20 Marks)

a) What is Conjunction? Give an example.
b) Define Disjunction. Give an example.
c) Define transitive relation. Give an example.
d) What is universal set and null set?
e) What is an algebraic system?
f) Write the properties of integers.
g) In how many ways can the letters of the word 'READER' be arranged?
h) Define combinations. Give an example.
i) Define planar graph. Give an example.
j) What is bipartite graph? Give an example.

PART-B

(Answer all five units, 5 X 10 = 50 Marks)

UNIT-1

2 a) Explain the well - formed formulas with an example. **[5M]**
b) Explain disjunctive normal Form. **[5M]**

OR

3 Explain the inference theory for predicate calculus. **[10M]**

UNIT-2

4 a) Explain transitive closure with an example. **[5M]**
b) Explain lattice and write its properties. **[5M]**

OR

5 What is relation? Explain the properties of binary relations with examples. **[10M]**

UNIT-3

6 Write the Euclidian algorithm with an example. **[10M]**

OR

7 Show that $<Z_5,+>$ is a group. **[10M]**

UNIT-4

8 Explain sum rule and product rule with an example. **[10M]**

OR

9 a) Suppose that 200 faculty members can speak French and 50 can speak Russian, while only 20 can speak both French and Russian. How many faculty members can speak either French or Russian? **[5M]**
b) Explain pigeonhole principle with an example. **[5M]**

UNIT-5

10 Explain krushkal's algorithm with an example. **[10M]**

OR

11 Explain the matrix representation of graphs with example. **[10M]**

*****