Roll No.: .....

Total No. of Questions : 5] [Total No. of Printed Pages : 1

W-3317(A)

M.A./M.Sc. (Fourth Semester) Examination, (Second Chance) June-2020

MATHEMATICS

Paper - 411

Discrete Mathematical Structure

Time : Three Hours

Maximum Marks : 85

Minimum Pass Marks : 29

Note : Attempt **all** questions.

Q.1. Define following terms:

a) First and last elements.

b) Maximal and minimal elements.

c) Totally ordered sets.

d) Well ordered sets.

Q.2. Define the following terms:

a) Contradictions and Tautologies.

b) Equivalence and implication.

Q.3. Show that in a complemented lattice $(L, \leq)$, $a \leq b \Leftrightarrow a' \vee b = 1 \Leftrightarrow a \wedge b' = 0 \Leftrightarrow b' \leq a'$.

Q.4. Write the following functions into conjunctive normal forms in three variables *x*, *y* and *z*.

a) $x + y'$

b) x

Q.5. Using generating function, solve the difference equation

$y_{n+2} - 4y_{n+1} + 3y_n = 0; y_0 = 2, y_1 = 4$