GALGOTIAS UNIVERSITY

School of Computing Science and Engineering
Bachelor of Technology in Computer Science and Engineering
Mid Term Examination - May 2024

Duration : 90 Minutes
Max Marks : 50

Sem II - G2UC101B - Introduction to Digital System

General Instructions
Answer to the specific question asked
Draw neat, labelled diagrams wherever necessary
Approved data hand books are allowed subject to verification by the Invigilator

1) What are the methods adopted to reduce Boolean function? — K2 (2)

2) What is the concept of Boolean duality? — K1 (3)

3) What do you mean by don't care conditions? Give an example. — K2 (4)

4) Subtract (9) from (4), Using 2's complement method. — K2 (6)

5) What do you mean by XNOR logic? Draw its truthtable and write its boolean expression. — K3 (6)

6) Design a logic circuit that has three inputs, A,B and C, and whose output will be HIGH when a majority of the inputs are HIGH. — K3 (9)

7) Applying the principles of Boolean algebra, analyze the given Boolean expression, $F(X, Y, Z) = X'Y + YZ' + YZ + XY'Z$. — K4 (8)

8) Reduce the expression $\Sigma m(0,2,3,4,5,6)$ using mapping and implement it in NAND logic. — K4 (12)

OR

Make a K-map for the function f= AB+AC'+C+AD+AB'C+ABC. (b) Express 'f' in standard SOP form. — K4 (12)