CLASS : S.E. COMP **SUBJECT : DEL**

EXPT. NO. : 8 **DATE :**

TITLE : SEQUENCE GENERATOR CIRCUIT

OBJECTIVE :

1. Design and Implement the following Sequence generator circuit using IC-74LS76 and verify its truth-table.

   Sequence: ( )

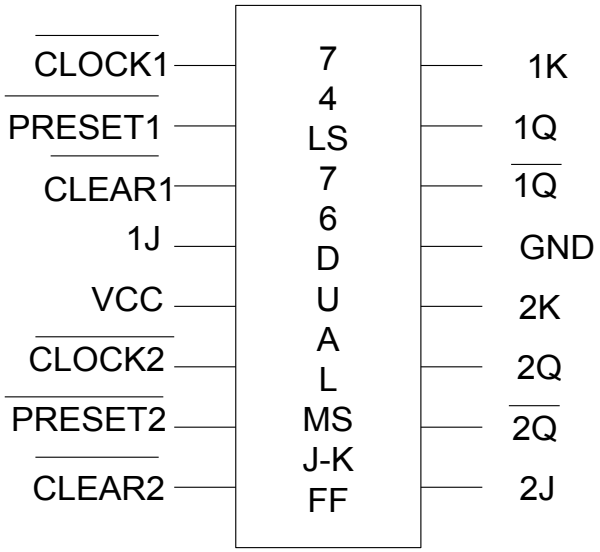
APPARATUS :

Digital-Board, GP-4 Patch-Cords, IC-74LS76, IC-74LS32, IC-74LS04/IC-74LS08 and Required Logic gates if any

THEORY :

Sequence Generator is a Sequential Logic circuits which can be use to generate the Pre-determined sequence. Sequence Generator is classified into two categories: Sequential Sequence Generator & Non-Sequential Sequence Generator. Ring Counter can be constructed using IC-74LS76.In case of Ring Counter output of last Flip-flop is connected to the J_A input of First Flip-Flop and complementary output of Last Flip-Flop is connected to K_A Input of First Flip-Flop. Output of first flip-flop (Q_A&$\overline{Q_A}$) is connected to the inputs of second flip-flop (J_B & K_B) and so on. And connect set & reset pin to Vcc.

PIN Diagram :



PROCEDURE :

1. Make the connections as per the Logic circuit of Sequence generator circuit using IC-74LS76 and Verify its Truth Table.

Design of Sequence Generator circuits with Lockout condition

Dec. Equ.	PRESENT STATE			NEXT STATE			INPUT					
	Q_A	Q_B	Q_C	Q_A^+	Q_B^+	Q_C^+	J_A	K_A	J_B	K_B	J_C	K_C

K-Map Simplification for J_A , K_A , J_B , K_B , J_C , K_C

Logic diagram:

Design of Sequence Generator without Lockout Condition

Dec. Equ.	PRESENT STATE			NEXT STATE			INPUT					
	Q_A	Q_B	Q_C	Q_A^+	Q_B^+	Q_C^+	J_A	K_A	J_B	K_B	J_C	K_C

K-Map Simplification for J_A , K_A , J_B , K_B , J_C , K_C

Logic Diagram:

Logic Gates / MSI Device required for Implementation:

Sr.No.	Title	Name of the IC	Number of Gates required	IC Required
01	Sequence Generator with lockout condition			
02	Sequence Generator with lockout condition			

CONCLUSION:

REFFRENCE:

1. **R.P.Jain "Modern Digital Electronics" TMH 4th Edition**
2. **D.Leach,Malvino,Saha,"Digital Principles and Applications",TMH**

Subject teacher Sign with Date Remark