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# CLASS : S.E. COMP SUBJECT : DEL

**EXPT. NO. : 7 DATE :10/12/2021**

**TITLE : Flip-Flop Conversion**

**OBJECTIVE : to Convert Jk to D and Jk to T**

1. Design and Implement conversion of JK to D and JK to T using Mode control switch (Use-IC-74LS76) and verify its truth-table.

**APPARATUS :**

Digital-Board, GP-4 Patch-Cords, IC-74LS76, IC-74LS90, IC-74LS191, IC-74LS32, IC-74LS04/IC-74LS08 and Required Logic gates if any

**THEORY :**

In electronics, flip flop is an electronic circuit and is is also called as a latch. Flip flops consist of two stable states which are used to store the data. These are basic building blocks of a digital electronic system which are used in various systems like communications, computers, etc. A basic flip flop can be used to construct a cross coupled inverting elements like invert gates, FETs, BJTs, inverters, vacuum tubes. Conversion of one type of flip flop to another can be done by using a combinational logic circuit. For instance, If a JK Flip Flop is necessary, the i/ps are given to the combinational circuit & the o/p of the combinational circuit is given to the i/ps of the actual flip-flop. Therefore, the o/p of the actual flip-flop is the o/p of the required flip-flop.

In this type of flip flop conversion, J&K are the actual inputs where D is the external input of the flip flop. The four combinations of the flip flop will be done by using D & Qp, and in terms of these two J&K are expressed.

In this type of conversion, J & k are the actual i/ps of the flip flop where K is considered as the external i/p. Four combinations are created by T, Qp, J & K that are expressed in terms of T & Qp.

# PIN Diagram :

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# PROCEDURE :

1. Make the connections as per the Logic circuit of conversion of JK to D and JK to T using IC-74LS76 and Verify its Truth Table.

**JK to D conversion**

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|  |

**JK to T conversion:**

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**Logic Gates / MSI Device required for Implementation:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sr.No.** | **Title** | **Name of the IC** | **Number of Gates required** | **IC**  **Required** |
| 01 | JK to T and D | MS-JK flip flop | 1 | IC-74LS76 |

**CONCLUSION:**

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| **We successfully applied theory and converted JK to T and D flip flop** |
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**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