**IQRA NATIONAL UNIVERSITY**



**DEPARTMENT OF ELECTRICAL ENGINEERING**

**DIGITAL LOGIC DESIGN**

**LAB MANUAL**

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| **NAME : \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****ROLL NO. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **SECTION:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ GROUP: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** |

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 ***DIGITAL LOGIC DESIGN (LAB)***

 ***LIST OF EXPERIMENTS***

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| **S.NO** | **EXPERIMENTS** |
| 1 | To analyze the operation of basic logic gates |
| 2 | Implementation of XOR and X-NOR using AND, OR and NOT gates |
| 3 | Implementation of Boolean function using AND and OR gates |
| 4 | Implementation of Boolean function using K-map into SOP, POS forms and using NAND and NOR gate  |
| 5 | Implementation of Adders and Subtractors |
| 6 | Implementation of 2 bit comparator |
| 7 | Implementation of Decoders (2 to 4 and 3 to 8) and Encoders (4 to 2 and 8 to 3) |
| 8 | Implementation of Multiplexers and Demultiplexers |
| 9 | BCD to 7-Segment Code Converter  |
| 10 | Implementation of Latches and D-Flip flops |
| 11 | Implementation of JK and T-Flip flops |
| 12 | Clock generation using 555 Timer IC |
| 13 | Register and its types |
| 14 | Mini Project |

 ***Instructor****: Engr. Bushra Tahir*