BACHELOR OF TECHNOLOGY (CBCS - 2023)

B. Tech. Sem-I INFORMATION TECHNOLOGY : WINTER: 2025

SUBJECT: DIGITAL ELECTRONICS

Day : Tuesday | Time : 10:00 AM-01:00 PM

Date : 16/12/2025 | W-27658-2025 | Max. Marks : 60

NB :

1. All questions are COMPULSORY.
2. Figures to the right indicate FULL marks for the question.
3. Draw neat labelled diagrams WHEREVER necessary.
4. Assume suitable data, if necessary.

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|---|---|---|
| Q. 1 | Explain binary multiplication and division with example for each. | (10) |
| | **OR** | |
| Q. 1 | what is Gray code? explain binary to Gray code conversion. | (10) |
| Q. 2 | Explain the NAND and NOR gates in detail. why are they called universal Gates? | (10) |
| | **OR** | |
| Q. 2 | Minimize the following expression using k-map y = m (0, 1, 3, 4, 5, 7, 9). | (10) |
| Q. 3 | Describe the full adder using suitable diagram. | (10) |
| | **OR** | |
| Q. 3 | Differentiate Half adder and full adder. | (10) |
| Q. 4 | Explain the working of JK Flip Flop with their logical symbol and truth tables. | (10) |
| | **OR** | |
| Q. 4 | Convert the SR Flip Flop to JK flip flop with k-map. | (10) |
| Q. 5 | Describe ASM Chart notation in details. | (10) |
| | **OR** | |
| Q. 5 | What is a Finite stare Machine (FSM)? explain with example. | (10) |
| Q. 6 | Differentiate ROM & RAM | (10) |
| | **OR** | |
| Q. 6 | Explain PLA architecture with their block diagram. | (10) |

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