

## TECHNICAL AAKRITI

### NAND IT ROUND 2

#### RULE:

1. Tab switching is not allowed. Only online multisim is allowed.
2. One can solve problem in proteus or multisim on his/her choice.
3. Microcontrollers are not allowed to use.
4. Total time: 90 minutes

#### QUESTIONS

1. Design four-bit full adder to compute the sum of two binary number 1100 and 1010.
2. Design a Gray to Binary Code Conversion and find the binary code of 1101 Gray code.
3. Design a Digital Clock seconds using mod 10 and mod 6 counters.
4. Prove DE Morgan's Theorem for two variable/inputs.
5. An automobile manufacturer needs a logic circuit to perform a specific task in its new line of cars. These cars will be equipped with a "headlight left on" alarm that sounds any time these two conditions are met: headlights on and ignition switch off. Draw the schematic diagram of a logic gate circuit that will implement this alarm, constructed entirely out of NAND gates