**DIGITAL LOGIC DESIGN & ANALYSIS**

- Convert (1473.45)10 into octal, binary and hexadecimal.
- Add (57) 10 and (26)10 in BCD.
- Prove OR-AND configuration is equivalent to NOR-NOR configuration.
- Subtract using 1's and 2's complement method (15)10-(21)10.
- Encode the data bits 0 1 0 1 into a seven bit even parity Hamming code.
- Prove NAND as universal gate.
- Define a redundant group.
- Given the logic expression: AB + AC + C + AD + ABC + ABC
    a) Express in standard SOP
    b) Draw the K-map for the equation
    c) Minimize and realise using NAND gates only.
- Design 2-bit magnitude comparator.
- Design a logic circuit to convert BCD to Gray code.
- Implement a full adder using demultiplexer.
- Compare different logic families with respect to fan in, fan out, speed, propogation delay and power dissipation.
- Design 16:1 Multiplexer using 4:1 Multiplexer
- Explain 4 bit bidirectional shift register

- Design mod 12 asynchronous down counter.
- Convert D flipflop to JK flipflop and SR flipflop.
- Write short note on (any four):-
    a) Multivibrators
    b) VHDL
    c) Race around condition.
    d) State table
    e) Ring Counter