PG/IIIS/ELC/396/23(Pr.)

M.Sc. 3rd Semester Examination, 2023

ELECTRONICS

(*VLSI Lab*)

(Practical)

PAPER – 396

Full Marks : 50

Time : 3 hours

Answer **all** questions

Candidates are required to give their answers in their own words as far as practicable

A. Answer any *one* question selecting it by lucky draw :

1. Draw a schematic diagram of an inverter circuit by using LT SPICE. Obtain the SPICE code of the circuit. Give the input and output waveforms of the circuit.

2. Draw a schematic diagram of a NAND circuit by using LT SPICE. Obtain the SPICE code of the circuit. Give the input and output waveforms of the circuit.

3. Draw a schematic diagram of a NOR circuit by using LT SPICE. Obtain the SPICE code of the circuit. Give the input and output waveforms of the circuit.

4. Draw a schematic diagram of a half adder circuit by using LT SPICE. Obtain the SPICE code of the circuit. Give the input and output waveforms of the circuit.

5. Draw layout of a NAND gate using Microwind software. Obtain input and output waveforms.

6. Draw layout of a NOR gate using Microwind software. Obtain input and output waveforms.

(*Continued*)

7. Draw layout of an inverter gate using Microwind software. Obtain input and output waveforms.

8. Write Verilog code for half adder circuit. Draw input and output waveforms.

9. Write Verilog code for full adder circuit. Draw input and output waveforms.

10. Write Verilog code for a NAND circuit. Draw input and output waveforms.

11. Draw a schematic diagram of Y=AB+C circuit by using LT SPICE. Obtain the SPICE code of the circuit. Give the input and output waveforms.

12. Write Verilog code for a NOR circuit. Draw input and output waveforms.

Marks Distribution

Program	: 10 Marks
Execution	: 15 Marks
Results	: 10 Marks
Viva voce	: 10 Marks
Laboratory Note Book	: 05 Marks
Total	: 50 Marks