

(ELE 3303)
B.Sc. Degree (CBCS) Examinations
FEBRUARY- 2022
EXAMINATION AT THE END OF III SEMESTER
PART - II ELECTRONICS
DIGITAL ELECTRONICS

TIME : Three hours

Maximum : 60 Marks

PART-A

Answer any FIVE questions.

5x4=20M

1. Convert the given binary number 1101 to gray code number and vice-versa.
2. Perform binary addition, subtraction with example 6 and 3.
3. State and prove De-Morgan's theorems.
4. Simplify $(A+B) \cdot (A+\bar{B}) \cdot (\bar{A}+C) = AC$ using Boolean algebra.
5. Explain Half Adder, Half Subtractor with logic diagram, with truth table.
6. Explain briefly about Magnitude comparator with truth table.
7. Explain S-R Flip Flop with circuit diagram, truth table.
8. Explain the process of Shift left register. Shift right register.
9. Draw the circuit of basic RAM memory cell.
10. Explain briefly about SRAM and DRAM.

PART-B

Answer the following questions.

5x8=40M

11. A) a) Subtract $(4)_{10}$ from $(9)_{10}$ i.e. $(9-4)$ using 1's complement method.
b) Subtract $(77)_{10}$ from $(87)_{10}$ i.e. $(87-77)$ using 2's complement method.
(OR)
- B) Convert the given decimal number $(81)_{10}$ into binary, octal, hexadecimal numbers.
Explain its process.
12. A) Explain construction of basic logic gates (AND, OR, NOT) using universal gates NAND, NOR.
(OR)
- B) Simplify the following Boolean equation using Karnaugh map
 $F(A, B, C) = \bar{A}\bar{B}C + A\bar{B}\bar{C} + A\bar{B}C + A\bar{B}\bar{C} + ABC$.

PTO



13 A, Explain Parallel Binary Adder with diagram.

(OR)

B, Explain the working of Transistor Logic with circuit diagram.

14 A, Explain JK Flip Flop with circuit diagram truth table.

(OR)

B, Draw the Asynchronous Mod-10 counter. Explain its operation, draw its truth table, timing diagram.

15 A, Explain Semiconductor Memories RAM, ROM, PROM, EPROM.

(OR)

B, Explain Programmable Array Logic (PAL) with diagram.