THREE YEAR B.Sc. (CBCS) DEGREE EXAMINATIONS :: 2022
SECOND SEMESTER
PART II: ELECTRONICS
DIGITAL ELECTRONICS
(New Regulations : 2020-21)

Time 3 hours *Max. Marks: 75*

SECTION - A
Answer any **THREE** of the following

Each question carries 5 marks (5 x 5 = 25 marks)

1. Write a brief note on excess-3 code.

2. Write a brief note on BCD code.

3. Briefly mention the laws of Boolean algebra.

4. Discuss 4-input NOR gate.

5. Explain the working of a half-adder.

6. Briefly explain the working of 4:1 multiplexer.

7. Discuss the working of RS flip-flop along with their truth tables.

8. Discuss serial in and serial out registers.

9. Briefly explain EEPROM.

10. Discuss EAROM.

SECTION - B
Answer **ALL** question

Each question carries 10 marks (5 x 10 = 50 marks)

11. (a) i. Subtract $25_{(10)}$ from $50_{(10)}$ using 1's complement method.

ii. Subtract $20_{(10)}$ from $15_{(10)}$ using 1's complement method.

(OR)

(b) Explain 9's and 10's complement method of subtraction with suitable examples.

P.T.O

12. (a) State and prove Demorgan's theorems.

(OR)

(b) Simplify the Boolean functions, $F(A, B, C) = \Sigma m(0, 1, 6, 7) + \Sigma d(3, 5)$ using a three variable Karnaugh map method and implement the simplified function using NAND gates.

13. (a) Explain the working of Full-adder circuit with the help of truth tables.

(OR)

(b) Discuss the working of 8-line to 3-line encoder.

14. (a) Explain the working of J-K and master-slave flip-flop.

(OR)

(b) Discuss the working of parallel in and parallel out registers.

15. (a) Explain the working of static and dynamic RAM.

(OR)

(b) Discuss the working of PROM and EPROM.