



**K25U 0815**

**Reg. No. : .....**

**Name : .....**

**IV Semester B.Sc. Degree (C.B.C.S.S. – O.B.E.-Regular/Supplementary/  
Improvement) Examination, April 2025  
(2019 to 2023 Admissions)**

**GENERAL AWARENESS COURSE IN COMPUTER SCIENCE**

**4A13CSC : Digital Electronics**

**Time : 3 Hours**

**Max. Marks : 40**

**PART – A  
(Short Answer)**

**Answer all questions.**

**(6×1=6)**

1. Define BCD code.
2. Convert  $(1010)_2$  to decimal.
3. Define a universal gate.
4. What is a minterm and maxterm ?
5. Define a half adder.
6. What is a flip-flop ?

**PART – B  
(Short Essay)**

**Answer any 6 questions.**

**(6×2=12)**

7. What is an SR flip-flop, and what is its drawback ?
8. What is the use of a T flip-flop ?
9. Explain full adder with circuit diagram.
10. Explain the universal property of NAND and NOR gates.

**P.T.O.**



11. Differentiate between SOP and POS forms.
12. What is the importance of K-map in Boolean simplification ?
13. Explain the significance of Gray code.
14. Convert  $(1101.101)_2$  to decimal.

**PART – C**

**(Essay)**

Answer **any 4** questions.

**(4×3=12)**

15. Convert  $(2F)_{16}$  to binary and decimal.
16. Explain excess-3 code with an example.
17. Prove De Morgan's Theorems with truth tables.
18. Explain the working of a half adder with a logic diagram.
19. What are the applications of shift registers ?
20. Explain the difference between serial and parallel data transfer.

**PART – D**

**(Long Essay)**

Answer **any 2** questions.

**(2×5=10)**

21. Explain the working of a master-slave flip-flop with a timing diagram.
  22. Explain the working of a 4-bit parallel adder with a neat diagram.
  23. Explain the different logic gates with their truth tables and logic symbols.
  24. Discuss binary arithmetic operations (addition, subtraction, multiplication, and division) with examples.
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