

ANURAG Engineering College

(An Autonomous Institution)

II B.Tech I Semester Regular/Supplementary Examinations, December-2024

DIGITAL ELECTRONICS**(COMMON TO CSE & IT)****Time: 3 Hours****Max. Marks: 60****Section – A (Short Answer type questions)****(10 Marks)****Answer All Questions**

	Course Outcome	B.T Level	Marks
1. Obtain the 1's and 2's Complement of the following binary number 1100110011.	CO1	L1	1M
2. Define Register.	CO1	L1	1M
3. Define min term and max term.	CO2	L1	1M
4. What are Don't care Conditions	CO2	L1	1M
5. Define multiplexer and state its applications.	CO3	L1	1M
6. What is magnitude Comparator?	CO3	L1	1M
7. What is state diagram?	CO4	L1	1M
8. Define counter.?	CO4	L1	1M
9. What is Cache Memory	CO5	L1	1M
10. Define Hazards.	CO5	L1	1M

Section B (Essay Questions)**Answer all questions, each question carries equal marks.****(5 X 10M = 50M)**

11. A) Subtract the following number using 9's complement method 436.62-745.81	CO1	L2	10M
OR			
B) Convert the following numbers with the given radix to decimal. i) $(61)_7$ ii) $(A1D)_H$ iii) $(73)_8$	CO1	L3	10M
12. A) Obtain the simplified expression in POSs for Boolean function $F(X, Y, Z) = \pi(1, 3, 4, 6)$	CO2	L3	10M
OR			
B) Simplify the Boolean function $F(A, B, C, D) = \sum(1, 3, 7, 11, 15)$ and the don't care conditions $d(A, B, C, D) = \sum(0, 2, 5)$ by K-map method.	CO2	L3	10M
13. A) Explain Full binary subtractor in detail.	CO3	L2	10M
OR			
B) Implement the following Boolean function using 8:1 multiplexer $F(A, B, C, D) = A'BD' + ACD + A'C'D + B'CD$	CO3	L3	10M
14. A) Explain the working of the following i) J-K flip-flop ii) S-R flip-flop iii) D flip-flop	CO4	L2	10M
OR			
B) Explain about Shift Registers.	CO4	L2	10M
15. A) Explain about PLA and PAL.	CO5	L2	10M
OR			
B) Implement the following function using PLA $A(x, y, z) = \sum m(1, 2, 4, 6)$, $B(x, y, z) = \sum m(0, 1, 6, 7)$, $C(x, y, z) = \sum m(2, 6)$	CO5	L3	10M