

BANGALORE INSTITUTE OF TECHNOLOGY
K R ROAD, V V PURA, BENGALURU-04
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
I Internals - 2024-25 (Odd)-Improvement

BATCH: 2023

COURSE (CODE):

SEM: 3rd

DATE & TIME: / /2024 ,3:30PM to 4:30PM

MAX MARKS: 30

USN:

Note: Answer any one full question from each PART

Q. No.	PART A (Module – I, III)	15M	CO's	PO's	Blooms Levels
1.a)	Find the minimum product of sum for given function using K-map and also identify the essential prime implicants. F(a,b,c,d)=m6+d4+m7+m12+d11+m13+m1+m15 and Realize the simplified circuits using basic gates.	5	1	1,2,3	3
1.b)	Prove that dual theorem $x+x=x$ and $x.x=x$	5	1	1,2,3	3
1.c)	With neat diagram explain basic functional units of computer.	5	3	1,2	2
	OR				
2.a)	i)Solve the sum of product for given function using K-map and find all essential prime implicants. X(p,q,r,s)= $\pi M(6,7,10,12,13) + d(0,4,8,11)$ ii) Obtain the sum of product for given Boolean expression using k-map F= A'B'+ BD+CD+B'C' .	4	1	1,2,3	3
2.b)	Write a short note on parallelism.	6	3	1,2,3	2
2.c)	Find the complement of the functions a) $F_1 = x'yz' + x'y'z$ and b) $F_2 = x(y'z' + yz)$.	5	3	1,2,3	2
	PART B(Module –I, III)	15M			
3.a)	Explain pipeline and super scalar operation, CISC and RISC operation.	5	1	3	3
3.b)	Implement the Boolean function with OR and INVERTER gates only. F = $xz + x'z' + x'y$	5	1	3	3
3.c)	Using the basic theorems and postulates of Boolean algebra, simplify the following Boolean expression: F = $x'y'z + xyz + x'y'z + x'y'z$.	5	1	1,2,3	3
	OR				
4.a)	Implement EX-NOR gate using universal NAND Gate.	5	1	1,2	3
4.b)	Write the VHDL program for Full adder.	5	1	1,2,5	3
4.c)	Explain the different registers in the computer.	5	3	1	2