

**K. J. Somaiya Institute of Technology, Sion, Mumbai-22**  
**(Autonomous College Affiliated to University of Mumbai)**

*Supplementary Exam*      *Feb-March 2024*  
 (B.Tech) Program: Electronics and Telecommunication Scheme II B  
 Examination:-SY Semester:-III  
 Course Code: EXC302 and Course Name: Digital Logic Design

Date of Exam: *28/2/24*      Duration: 2.5 Hours      Max. Marks: 60

Instructions:				
(1) All questions are compulsory.				
(2) Draw neat diagrams wherever applicable.				
(3) Assume suitable data, if necessary.				
		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	Perform addition of 30 and -45 using 2's complement arithmetic.		CO1	A
ii)	Define TTL logic.		CO1	U
iii)	Using truth table of 4:1 multiplexer, find the Boolean expressions for output variables Y, if D1 and D3 inputs are selected.		CO2	U
iv)	List the advantages of sequential circuits over combinational circuits.		CO4	U
v)	Explain dynamic RAM.		CO3	U
vi)	What is VHDL? List the logical operator supported by VHDL.		CO6	U
vii)	Write an excitation table of D FlipFlop.		CO4	U
viii)	What will be the output of the magnitude comparator if it compares two binary numbers A=1010 and B=0110?		CO2	A
Q.2	Solve any four questions out of six.	16		
i)	Convert binary number $(10010101)_2$ into decimal number and Octal number $(22.34)_8$ into decimal number.		CO1	A
ii)	Convert given Boolean expression into standard SOP form $Y=AB^+ABC+B^+C^+$		CO2	A
iii)	Design full subtractor for three input bits and produces output as difference and borrow.		CO2	A
iv)	Explain S-R flip flop digital circuit in detail.		CO4	U

**K. J. Somaiya Institute of Technology, Sion, Mumbai-22**  
**(Autonomous College Affiliated to University of Mumbai)**

*Supplementary Exam*      *Feb-March 2024*  
 (B.Tech) Program: Electronics and Telecommunication Scheme II B  
 Examination:-SY Semester: -III  
 Course Code: EXC302 and Course Name: Digital Logic Design

Date of Exam: *28/2/24*      Duration: 2.5 Hours      Max. Marks: 60

Instructions:				
(1) All questions are compulsory.				
(2) Draw neat diagrams wherever applicable.				
(3) Assume suitable data, if necessary.				
		Max. Marks	CO	BT level
Q 1	Solve any six questions out of eight:	12		
i)	Perform addition of 30 and -45 using 2's complement arithmetic.		CO1	A
ii)	Define TTL logic.		CO1	U
iii)	Using truth table of 4:1 multiplexer, find the Boolean expressions for output variables Y, if D1 and D3 inputs are selected.		CO2	U
iv)	List the advantages of sequential circuits over combinational circuits.		CO4	U
v)	Explain dynamic RAM.		CO3	U
vi)	What is VHDL? List the logical operator supported by VHDL.		CO6	U
vii)	Write an excitation table of D FlipFlop.		CO4	U
viii)	What will be the output of the magnitude comparator if it compares two binary numbers A=1010 and B=0110?		CO2	A
Q.2	Solve any four questions out of six.	16		
i)	Convert binary number $(10010101)_2$ into decimal number and Octal number $(22.34)_8$ into decimal number.		CO1	A
ii)	Convert given Boolean expression into standard SOP form $Y=AB^+ABC+B^+C^+$		CO2	A
iii)	Design full subtractor for three input bits and produces output as difference and borrow.		CO2	A
iv)	Explain S-R flip flop digital circuit in detail.		CO4	U