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Examination: Odd Semester Examination 2024

Paper Name: Digital Electronics *Paper Code: BTCSEAI 304*
Time: 2 Hours 30 Minutes *Maximum Marks: 60*

Section A

Note: Attempt all the questions. Each question carries equal marks. *(4x5=20)*

Q. No.	Question	Marks	CO	BL
1.	Perform the following conversions: a) Convert $(4766)_{10}$ to binary. b) Convert $(1001)_2$ to Gray code.	5	CO1	BL4
2.	Implement the following expression using 8:1 multiplexer: $F(A,B,C,D) = \Sigma m\ (1,2,4,12,13)$	5	CO2	BL5
3.	Explain JK and D flip-flop with the help of a neat diagram.	5	CO3	BL2
4.	Explain the working of a R-2R ladder DAC (Digital to Analog Converter).	5	CO4	BL3

Section B

Note: Attempt any four (4) Questions. Each question carries equal marks *(4x10=40)*

Q. No.	Question	Marks	CO	BL
1.	Design a 4-bit asynchronous up-down counter using T flip-flop.	10	CO3	BL6
2.	Minimize the following using K-Maps i) $F= \sum m\ (9,11,12,13,14,15)$ ii) $F= \sum m\ (0,1,4,6,8,11) + d(3,14,15)$	10	CO2	BL4
3.	Convert SR flip-flop into i) JK flip-flop ii) T flip-flop	10	CO3	BL3
4.	Describe dual slope ADC (Analog to Digital Converter) with the help of a neat diagram.	10	CO4	BL5
5.	Explain memory organization of a computer system.	10	CO5	BL3
6.	Write a short note on any two of the followings:	10	CO1, CO5	BL2

PTO

	a. FPGA b. ROM c. TTL logic family d. CMOS			

BL: Blooms Taxonomy Level; (1-remembering, 2-understanding, 3-apply, 4-analyse, 5- evaluate, 6-create)