Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 30-10-2025 **Time:** 02.30Pm to 04.00Pm

School: SOIS	**Program:** BCA	
Course Code : CSA1200	**Course Name:** Digital Computer Fundamentals	
Semester: I	**Max Marks**: 50	**Weightage**: 25%

CO – Levels	CO1	CO2	CO3	CO4	CO5
Marks	36	14	-	-	-

Instructions:

(i) Read all questions carefully and answer accordingly.

(ii) Do not write anything on the question paper other than roll number.

Part A

Answer ALL the Questions. Each question carries 2marks. **5Q x 2M=10M**

1	State De Morgan's law.	**2 Marks**	**L1**	**CO1**
2	Calculate equivalent value of decimal for $(234)_8$.	**2 Marks**	**L2**	**CO1**
3	Show that A+AB+ABC+ABCD = A.	**2 Marks**	**L2**	**CO1**
4	What is half adder?	**2 Marks**	**L1**	**CO1**
5	List any two applications of combinational circuits.	**2 Marks**	**L1**	**CO2**

Part B

Answer the Questions. **Total Marks 40M**

6.	**a.**	Calculate both SOP and POS from the Boolean expression F(A,B,C,D) = Π (0,2,4,6,8,9,12).	**15 Marks**	**L3**	**CO1**
	b.	Implement XOR AND XNOR gates using NOR gates.	**5 Marks**	**L2**	**CO1**
		Or			
7.	**a.**	Determine simplified sum of product term from the Boolean expression F(A, B, C, D)=(A+C). (B'+D). (A+B'+C). (C+D)	**15 Marks**	**L3**	**CO1**
	b.	Show that (A+B) (A+C) = A + BC	**5 Marks**	**L2**	**CO1**

8.	**a.**	State and prove Distributive laws.	**10 Marks**	**L3**	**CO1**
	b.	Explain about Multiplexer. How parallel communication is converted to serial communication?	**10 Marks**	**L2**	**CO2**
		Or			
9.	**a.**	Simplify using k-map F(A, B, C, D) = Σ(0,2,4,6,8,9,12) + D(1,3,5,7)	**10 Marks**	**L3**	**CO1**
	b.	Portray about Demultiplexer. How serial communication is converted to parallel communication?	**10 Marks**	**L2**	**CO2**