Roll No.												

PRESIDENCY UNIVERSITY

BENGALURU

Mid - Term Examinations – October 2025

Date: 09-10-2025 **Time:** 02.00pm to 03.30pm

School: SOIS	**Program:** BCA, BCA(DS), BCA(AIML)	
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 absorption law.	**2 Marks**	**L1**	**CO1**
2	What is Boolean algebra?	**2 Marks**	**L1**	**CO1**
3	Show that (A'(A'+1))' = A	**2 Marks**	**L1**	**CO1**
4	Compare multiplexer and demultiplexer.	**2 Marks**	**L1**	**CO2**
5	Define combinational circuits.	**2 Marks**	**L1**	**CO2**

Part B

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

6.	**a.**	Determine sum of product terms from the given Boolean expression F(A, B, C, D) = (A'+B+D). (A+C'+D). (A'+B'+C'). (A+B+C).	**15 Marks**	**L3**	**CO 1**
	b.	Implement XOR and XNOR using NAND gates	**5 Marks**	**L2**	**CO 1**
		Or			
7.	**a.**	Compute simplified product of sum from the Boolean expression F(A, B, C, D)= AC+B'D	**15 Marks**	**L3**	**CO 1**
	b.	Discuss in detail about 3 variable k-map.	**5 Marks**	**L2**	**CO 1**

8.	**a.**	State and prove De morgan's law.	**10 Marks**	**L**	**CO 1**
	b.	Describe about Full adder. How full adder can be constructed using half adders?	**10 Marks**	**L**	**CO 2**
		Or			
9.	**a.**	Compute equivalent value of hexadecimal, decimal and binary for the octal number $(456)_8$.	**10 Marks**	**L**	**CO 1**
	b.	Describe about Full subtractor. How full subtractor can be constructed using half subtractors?	**10 Marks**	**L**	**CO 2**