TH241555MAJ

Reg. No.....

Name.....

FYUG PROGRAMME EXAMINATIONS, NOVEMBER 2024

(2024 Admission Regular)

SEMESTER I – MAJOR (BCA)

CP1DSC02B24 - DIGITAL FUNDAMENTALS

Time: 2 Hours **Maximum Marks: 70**

PART A

I. Answer all questions. Each question carries 2 marks

Q.No:	QUESTIONS	CO	LEVEL
1.	Convert 131.5625_{10} to binary.	1	Ap
2.	Find the 1's compliment and 2's compliment of 110011012	1	Ap
3.	Convert the Boolean expression to standard SOP form. AB+AC	2	Ap
4.	Briefly explain maxterm.	2	U
5.	What do you mean by don't care condition?	2	U
6.	List any one use of full adder.	3	U
7.	What do you mean by combinational logic circuit?	3	U
8.	Write the function and logic circuit for the output carry of a full adder.	3	Ap
9.	Draw the diagram of JK flip-flip.	4	Ap
10.	When is the master enabled on a master slave flip flop?	4	U

(10x2=20)

PART B

II. Answer any 5 questions. Each question carries 6 marks

Q.No:	QUESTIONS	CO	LEVEL
11.	Briefly explain sign-magnitude representation of numbers. Also perform the addition 30 + 15 in BCD scheme.	1	Ap
12.	Using Boolean algebra prove the following:	2	Ap

	AB+A(B+C)+(B+C)=B+AC		
13.	Simplify the expression F (A, B, C) = Σ m(0, 2, 4, 5, 6)	2	Ap
14.	Write a note on half adder.	3	U
15.	Explain Decimal-to-BCD encoder.	3	U
16.	Explain demultiplexer.	3	U
17.	Briefly explain T-flip-flop and D- flip-flop.	4	U

(5x6=30)

PART C

III. Answer any 2 questions. Each question carries 10 marks.

Q.No:	QUESTIONS	CO	LEVEL
18.	Write a note on BCD code. Also explain BCD addition with suitable example.	1	U
19.	Explain the laws and rules of Boolean algebra.	2	U
20.	Explain Shift Registers	4	U

(2x10=20)

CO : Course Outcomes Level : R – Remember, U – Understand, Ap- Apply, An- Analyze, E- Evaluate, C- Create