Q.P. Code:20CS0503 **R20**

Reg. No: | | | | | | | | | | |

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR

(AUTONOMOUS)

B.Tech I Year II Semester Supplementary Examinations May-2022

DIGITAL LOGIC DESIGN

(Common to CSE, CSIT, CSM & CIC)

Time: 3 hours Max. Marks:60

(Answer all Five Units **5 x 12 = 60** Marks)

UNIT-I

1	a	i)$(41.6875)_{10}$to Hexadecimal number ii)$(11001101.0101)_2$to base-8 andbase-4	L5	6M
	b	Subtract $(111001)_2$ from (101011) using2'scomplement.	L5	6M

OR

2	a	Express the Boolean function $F=A+B^{I} C$ as a sum of min terms.	L1	6M
	b	Convert the given expression in standard POS form: Y=A (A+B+C).	L6	6M

UNIT-II

3		Simplify the following Boolean expression using K-MAP and implement using NAND gates. F(W,X,Y,Z)=XYZ+WXY+WYZ+WXZ	L6	12M

OR

4	a	Design the circuit by Using NAND gates F= ABC'+DE+AB'D'	L6	6M
	b	Design the circuit by Using NOR gates F= (X+Y).(X'+Y'+Z')	L6	6M

UNIT-III

5		Draw and explain the working of a Carry- Look ahead adder.	L2	12M

OR

6	a	What is combinational circuits and explain analysis and design procedure of combinational circuits.	L1	6M
	b	Explain about Priority encoder.	L2	6M

UNIT-IV

7	a	Explain the Logic diagram of JK flip-flop.	L2	6M
	b	Write difference between Combinational & Sequential circuits.	L5	6M

OR

8		Explain the design of a 4 bit binary counter with parallel loadin detail.	L2	12M

UNIT-V

9		Explain about Error correction & Detection Codes with examples.	L2	12M

OR

10		Implement the following functions using PLA $A(x,y,z)=\sum m(1,2,4,6)$, $B(x,y,z)=\sum m(0,1,6,7)$, $C(x,y,z)=\sum m(2,6)$	L5	12M

*** END ***