Reg. No: ☐☐☐☐☐☐☐☐☐☐

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Supplementary Examinations February-2022
SWITCHING THEORY AND LOGIC DESIGN
(Electrical and Electronics Engineering)

Time: 3 hours   Max. Marks: 60

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

UNIT-I

1	Express the function Y=A+B'C in (i) Canonical SOP form (ii) Canonical POS form	L3	12M

OR

2	A receiver with even parity hamming code is received the data as 1110110. Determine the correct code.	L3	12M

UNIT-II

3	Minimize the given Boolean function $F(A,B,C,D) = \Sigma\, m(2,3,5,7,8,10,12,13)$ using tabulation method.	L2	12M

OR

4	Simplify the following Boolean expressions using K-map. $F(A, B, C, D)= \pi M(0,2,3,8,9,12,13,15)$	L3	12M

UNIT-III

5	What is Encoder? Design the circuit for Octal to Binary encoder with truth table	L1	12M

OR

6	What is Demultiplexer? Desingn1:8 Demultiplexer using 1:4 Demultiplexers.	L1	12M

UNIT-IV

7	Design and implement 3-bit ripple counter using J-K flip flop. Draw the state diagram, logic diagram and timing diagram for the same.	L3	12M

OR

8	a Draw the logic diagram for D Flip Flop by using SR Flip Flop Explain the operation with truth table.	L1	6M
	b Write the differences between combinational and sequential circuits	L2	6M

UNIT-V

9	Implement the following Boolean function using PAL. (i)$W(A,B,C,D) = \Sigma m(0,2,6,7,8,9,12,13)$ (ii)$X(A,B,C,D) = \Sigma m(0,2,6,7,8,9,12,13,14)$ (iii)$Y(A,B,C,D) = \Sigma m(2,3,8,9,10,12,13)$ (iv)$Z(A,B,C,D) = \Sigma m(1,3,4,6,9,12,14)$	L3	12M

OR

10	a What is FSM? Give the applications of FSM.	L3	6M
	b Explain about Memory decoding.	L3	6M

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