R18

Reg. No:

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)
B.Tech II Year II Semester Regular Examinations October-2020
DIGITAL ELECTRONICS
(Electrical & Electronics Engineering)

Time: 3 hours   Max. Marks: 60

PART-A
(Answer all the Questions 5 x 2 = 10 Marks)

1	**a** Convert decimal $(48)_{10}$ to equivalent binary form.	**2M**
	b What is multiplexer? Draw 4X2 multiplexer.	**2M**
	c How the shift register works?	**2M**
	d Design NAND gate using NOR gates.	**2M**
	e Define cache memory.	**2M**

PART-B
(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

2	**a** What is Switching Functions? Explain switching functions.	**5M**
	b Simplify the following Boolean functions to minimum number of literals: F = ABC + ABC' + A'B	**5M**

OR

3	Explain about canonical SOP and POS forms.	**10M**

UNIT-II

4	Minimize the given Boolean function $F(A,B,C,D) = \Sigma\ m(0,1,2,3,6,7,13,15)$ using tabulation method and implement using basic gates?	**10M**

OR

5	**a** Implement the fallowing Boolean function with 8:1 multiplexer. $F(A,B,C,D)=\pi M(0,3,5,6,8,9,10,12,14)$	**5M**
	b Implement the fallowing Boolean function with 8:1 multiplexer. $F(A,B,C,D)=\Sigma m(0,2,6,10,12,13)+d(3,8,14)$	**5M**

UNIT-III

6	Draw the circuit of JK flip-flop using NAND gates and explain its operation.	**10M**

OR

7	What is Register Explain i) Parallel in Parallel out Register ii) Series in Parallel out Register.	**10M**

UNIT-IV

8	What does ECL mean? Draw the circuit of Tristate ECL logic and explain the functions?	**10M**

OR

9	Explain about Logic gates with symbols and truth tables.	**10M**

UNIT-V

10	What is ROM organization? Explain about Different types of ROM.	**10M**

OR

11	Implement PLA circuit for the following functions $F1(A,B,C)= \Sigma m(3,5,6,7)$, $F2(A,B,C)= \Sigma m(0,2,4,7)$.	**10M**

END