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SUBJECT CODE NO:- P-142
FACULTY OF ENGINEERING AND TECHNOLOGY
S.E.(CSE/IT) Examination May/June 2017
Digital Electronics
(Revised)

[Time:ThreeHours] **[Max.Marks:80]**

Please check whether you have got the right question paper.

N.B i) Q.No.1 and Q.No.6 are compulsory.
ii) Attempt any two questions from Q.2 to Q.5 and two question from Q.7 to Q.10
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Section A

Q.1 Solve any two question (each for 2 marks) 10
a) What is along signal ?
b) What is dints care condition?
c) Draw 3 variable k-map
d) Draw symbol for x-or gate
e) Give truth table of or gate
f) What is PAL and PLA
g) Define prime implicant terms
h) What is decoder

Q.2 a) Explain logic gates in detail 07
b) Minimize following expression using k-map and realize the same using NAND gate only 08
Y (A, B C D) = =$\sum m$ (1, 4, 5, 6, 9, 12, 13, 14,) + $\sum d$ (8,10, 11)

Q.3 a) Draw and explain 10 bit even parity generator 07
b) Minimize following logic expression using quine mc- cluskey method 08
F(A, B, C, D) =$\sum m$ (0,1, 2, 3, 5, 7, 8, 9, 11, 14)

Q.4 a) Design 32:1 MUX using 8:1 MUX 07
b) Explain characteristics of digital ICs 08

Q.5 a) Realize following using 4 to 16 line decoder 08

$$f_1 = \sum m(0,3, 5, 6, 10, 11, 12)$$
$$f_2 = \sum m(1, 2, 7, 13, 14, 15)$$
$$f_3 = \sum m (2, 6, 10, 12, 13, 14)$$

b) Compare combinational logic ckt with sequential logic ckt . 07

Section B

Q.6 Solve any five question (each for marks 2) 10
a) Draw 4 bit PIPO shift register
b) Draw logic symbol of D flip – flop
c) Enlist types of shift register
d) What are the applications of DAC?
e) How many flip – flops are needed to design MOD 9 counter ?
f) Give truth table of T flip – flop
g) What us ring counter ?
h) What are the types of ADC?

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Q.7	a)	draw and explain Johnson Ring counter	07
	b)	Explain implementation of 3 bit R-2R binary ladder .	08
Q.8	a)	Explain single slop ADC	07
	b)	Design 4 bit synchronous counter using D type flf	08
Q.9	a)	Convent S-R flf to D type flf and convent T f|f to D type f|f	08
	b)	Draw and explain SISO right shift register	07
Q.10	a)	Design 3 bit parallel comparator ADC	07
	b)	Explain UP- down counter	08