

VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS)

IBRAHIMBAGH, HYDERABAD-31

Department of Computer Science and Engineering

Course: Logic and Switching Theory

Sem: II

Class: I year

Faculty: P.Ashwini

Academic Year: 2022-23

INNOVATIVE TEACHING LEARNING METHODS

1. Think Pair Share

2. Mind Map

3. Seminar

1. Think Pair Share

In this activity students are given with the following problem

Design a combinational circuit 2's complementor using Programmable Array Logic.

2. Mind Map

Assigned following topics to the students to submit mind map.

S.No	Roll.No	Topic
1	1602-22-748-001	Digital Logic Gates
2	1602-22-748-002	Number System
3	1602-22-748-003	Combinational Circuits
4	1602-22-748-004	Sequential Circuits
5	1602-22-748-005	Latches
6	1602-22-748-006	Flip Flops
7	1602-22-748-007	Memory System
8	1602-22-748-008	Programmable Logic devices
9	1602-22-748-009	Digital circuit design
10	1602-22-748-010	Digital System
11	1602-22-748-011	Digital Logic Gates
12	1602-22-748-012	Number System
13	1602-22-748-013	Combinational Circuits

14	1602-22-748-014	Sequential Circuits
15	1602-22-748-015	Latches
16	1602-22-748-016	Flip Flops
17	1602-22-748-017	Memory System
18	1602-22-748-018	Programmable Logic devices
19	1602-22-748-019	Digital circuit design
20	1602-22-748-020	Digital System
21	1602-22-748-021	Digital Logic Gates
22	1602-22-748-022	Number System
23	1602-22-748-023	Combinational Circuits
24	1602-22-748-024	Sequential Circuits
25	1602-22-748-025	Latches
26	1602-22-748-026	Flip Flops
27	1602-22-748-027	Memory System
28	1602-22-748-028	Programmable Logic devices
29	1602-22-748-029	Digital circuit design
30	1602-22-748-030	Digital System
31	1602-22-748-031	Digital Logic Gates
32	1602-22-748-032	Number System
33	1602-22-748-033	Combinational Circuits
34	1602-22-748-034	Sequential Circuits
35	1602-22-748-035	Latches
36	1602-22-748-036	Flip Flops
37	1602-22-748-037	Memory System
38	1602-22-748-038	Programmable Logic devices
39	1602-22-748-039	Digital circuit design
40	1602-22-748-040	Digital System
41	1602-22-748-041	Digital Logic Gates
42	1602-22-748-042	Number System
43	1602-22-748-043	Combinational Circuits
44	1602-22-748-044	Sequential Circuits
45	1602-22-748-045	Latches
46	1602-22-748-046	Flip Flops
47	1602-22-748-047	Memory System
48	1602-22-748-048	Programmable Logic devices
49	1602-22-748-049	Digital circuit design
50	1602-22-748-050	Digital System
51	1602-22-748-051	Digital Logic Gates
52	1602-22-748-052	Number System
53	1602-22-748-053	Combinational Circuits
54	1602-22-748-054	Sequential Circuits

EST. Activity

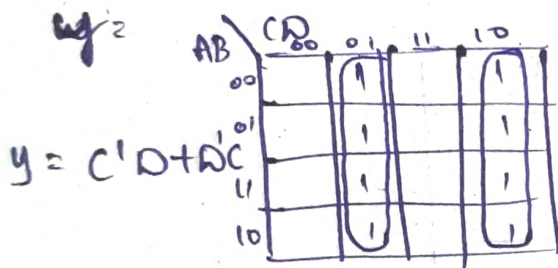
1602-22-748-033
1602-22-748-049
1602-22-748-050
1602-22-748-049
CSE(AIML)

esign a 4-bit combinational circuit's complementer using PAL

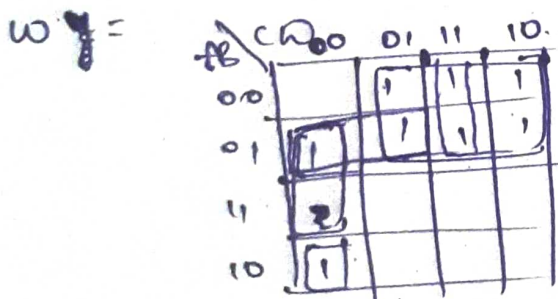
A	B	C	D	w	x	y	z
0	0	0	0	0	0	0	0
0	0	0	1	0	0	0	0
0	0	1	0	0	1	1	1
0	0	1	1	1	1	1	0
0	1	0	0	1	1	0	1
0	1	0	1	1	1	0	0
0	1	1	0	1	0	1	1
0	1	1	1	1	0	0	1
1	0	0	0	1	0	0	0
1	0	0	1	0	1	1	1
1	0	1	0	0	1	1	0
1	0	1	1	0	1	0	1
1	1	0	0	0	1	0	0
1	1	0	1	0	0	1	1
1	1	1	0	0	0	1	0
1	1	1	1	0	0	0	1

$$y = \sum (1, 2, 5, 6, 9, 10, 13, 14)$$

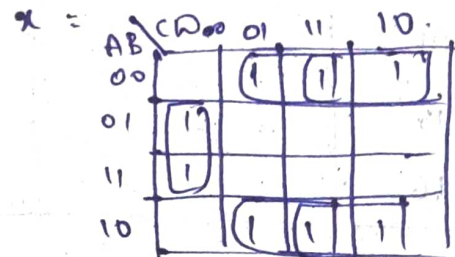
$$x = \sum (1, 2, 3, 4, 9, 10, 11, 12)$$



$$w = \sum (1, 2, 3, 4, 5, 6, 7, 8)$$

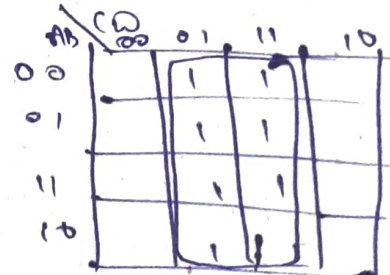


$$w = A'B + A'C + A'D + AB'C'D'$$



$$x = B'D + B'C + B'C'D$$

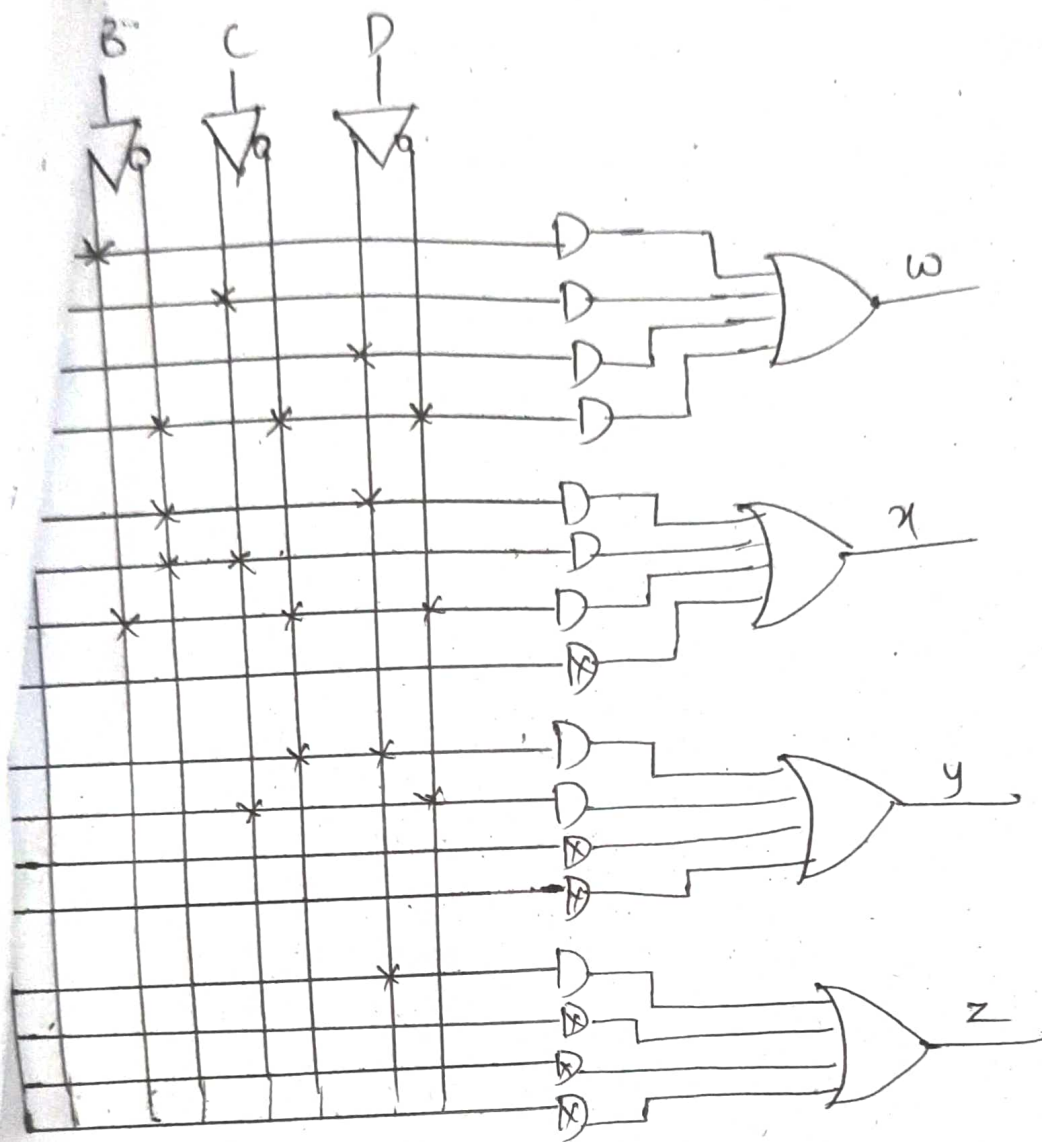
$$z = \sum (1, 3, 5, 7, 9, 11, 13, 15)$$



$$z = D$$

PAL TABLE

Product term	A	B	C	D	O/P
1	0	1	-	-	$w = AB + A'C$ $+ A'D +$ $AB'C'D'$
2	0	-	1	-	
3	0	-	-	1	
4	1	0	0	0	
5	-	0	-	1	$x = B'D + B'C$ $+ B'C'D'$
6	-	0	1	-	
7	-	1	0	0	
8	-	-	-	-	
9	-	-	0	1	$y = c'd + c'd'$
10	-	-	1	0	
11	-	-	-	-	
12	-	-	-	-	
13	-	-	-	1	$z = D$
14	-	-	1	-	
15	-	-	-	-	
16	-	-	-	-	



	A	B	C	D
0	0	0	0	0
1	0	0	0	1
2	0	0	1	0
3	0	0	1	1
4	0	1	0	0
5	0	1	0	1
6	0	1	1	0
7	0	1	1	1
8	1	0	0	0
9	1	0	0	1
10	1	0	1	0
11	1	0	1	1
12	1	1	0	0
13	1	1	0	1
14	1	1	0	0
15	1	1	1	1

Handwritten symbols and characters, possibly representing a code or cipher, arranged in a grid-like pattern. The symbols include letters (w, x, y, z), numbers (0, 1), and various marks (dots, dashes, and small circles).

AB (C) 00 01 11 10

00		1	1	1
01	1		1	1
11	1			
10	1			

22

Hand-drawn 3D grid showing the addition of 100 + 10 + 1 = 111. The grid has three axes labeled AB, 100, and 10. The 100 axis has markings for 100, 10, and 1. The 10 axis has markings for 10 and 1. The 1 axis has a marking for 1. The grid contains three cubes: one at (100, 10, 1) labeled '100', one at (10, 1, 1) labeled '10', and one at (1, 1, 1) labeled '1'. The sum '111' is written at the top right.

8 = ABCD

	00	01	11	10
00				
01				
11				
10				

$A'B + AB$

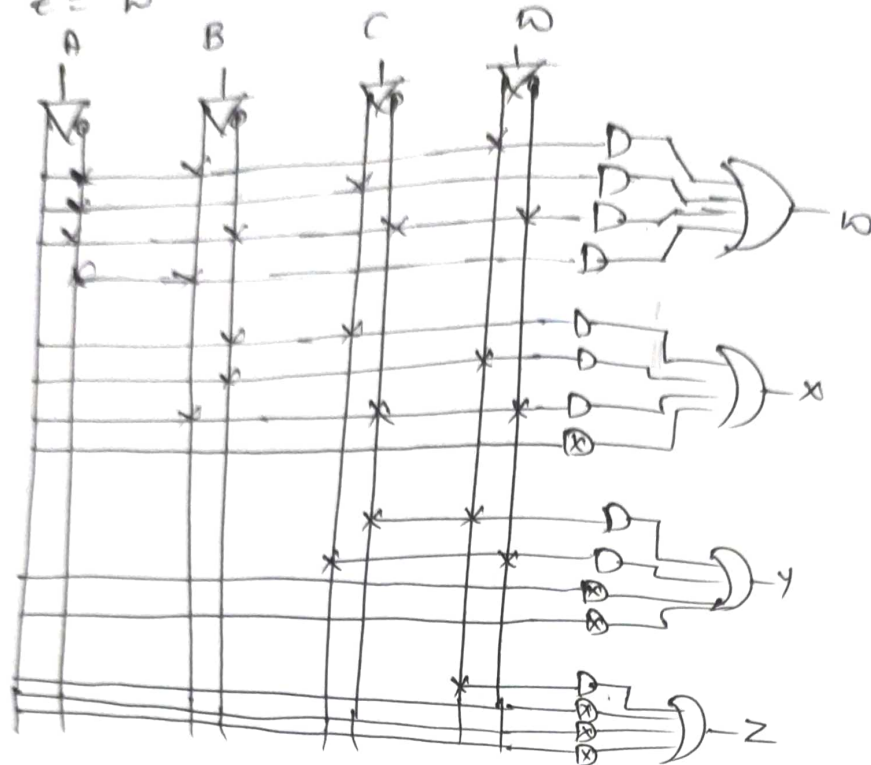
$$Z = C'D' + CWZD$$

$$w = A'B + A'D + A'C + ABC'D$$

$$x = B'C + B'D + BC'D'$$

$$y = C'D + CD'$$

$$z = D$$



PAZ Table:

product term	i/p				o/p			
	A	B	C	D	w	x	y	z
1	0	1	-	-	$w = A'B + A'C + A'D + ABC'D$			
2	0	-	1	-				
3	0	-	-	1				
4	1	0	0	0				
5	-	0	-	1	$x = B'D + B'C + BC'D'$			
6	-	0	1	-				
7	-	1	0	0				
8	-	-	-	-				
9	-	-	0	1	$y = C'D + CD'$			
10	-	-	1	0				
11	-	-	-	-				
12	-	-	-	-				
13	-	-	-	1	$z = D$			
14	-	-	-	-				
15	-	-	-	-				
16	-	-	-	-				