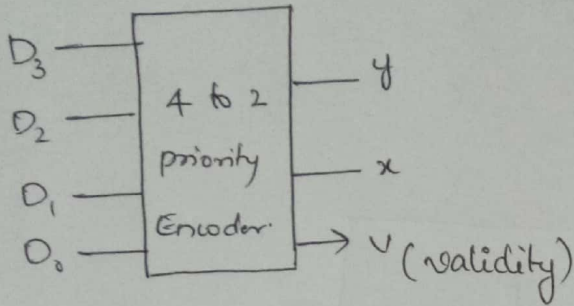


19/02

# DIGITAL SYSTEMS

TUESDAY

## PRIORITY ENCODER



$D_0$	$D_1$	$D_2$	$D_3$	$x$	$y$	$v$
0	0	0	0	x	x	1
1	0	0	0	0	0	0
x	1	0	0	0	1	0
x	x	1	0	1	0	0
x	x	x	1	1	1	0

$$V = \bar{D}_0 \cdot \bar{D}_1 \cdot \bar{D}_2 \cdot \bar{D}_3$$

$$x = D_3 + D_2$$

$$y = D_3 + D_1 \cdot \bar{D}_2$$

Karnaugh map for  $x$ :

$D_0 D_1$	00	01	11	10
$D_2 D_3$	x	0	0	0
00				
01	1	1	1	1
11	1	1	1	1
10	1	1	1	1

Groupings:  $D_3$  (vertical group of 4),  $D_2$  (horizontal group of 4).

Karnaugh map for  $y$ :

$D_0 D_1$	00	01	11	10
$D_2 D_3$	x	1	1	0
00				
01	1	1	1	1
11	1	1	1	1
10	0	0	0	0

Groupings:  $\bar{D}_2 \cdot \bar{D}_1$  (horizontal group of 2),  $D_3$  (vertical group of 4).

## FEEDBACK FOR QUIZ-1

Not comfortable with order of questions

TIME NOT SUFFICIENT  $\rightarrow$  < 10 ppl

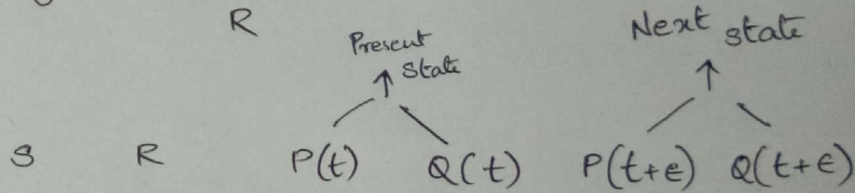
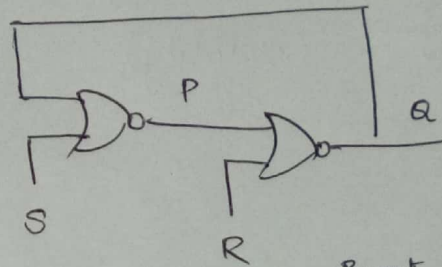
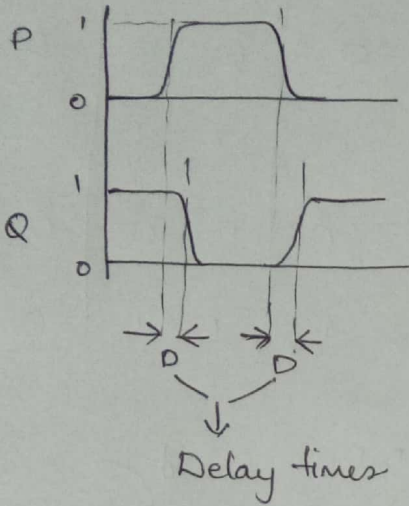
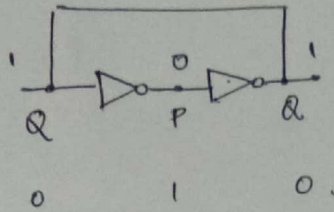
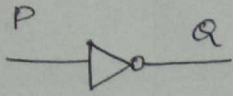
DIFFICULT  $\rightarrow$  At least half the class, (difficult)

8  $\rightarrow$  ppl (moderate)

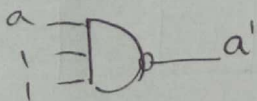
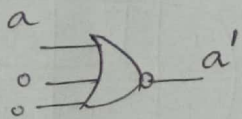
4-5  $\rightarrow$  ppl (very difficult)

# Sequential Circuits

## LATCHES & FLIP-FLOPS



Note that



No change

0	0	1	0	1	0
0	0	0	1	0	1