

Tut - 5

5: clock

J

K

J = 1, K = 1

Q initialized = 0

if Q init = 0

Freq. = 5 kHz

After clock triggering, Q toggles

6:

J

K

C

Assn Q = 0

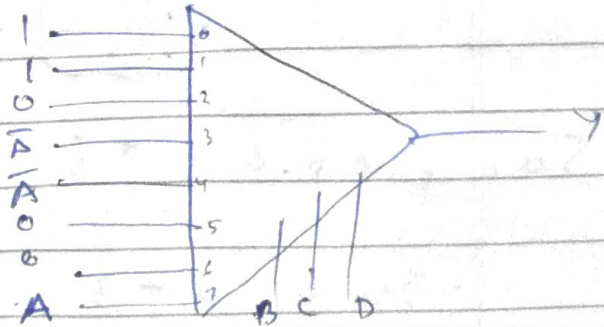
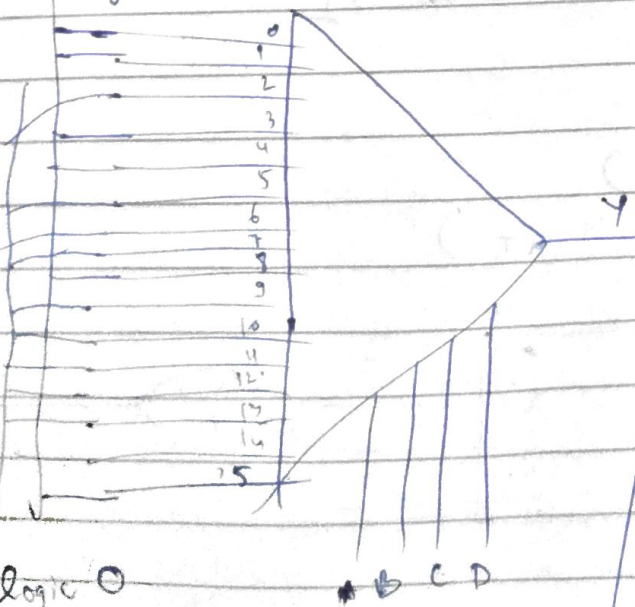
Q

\bar{Q}

2a $F(A, B, C, D) = \sum (0, 1, 3, 4, 8, 9, 15)$

logic 1

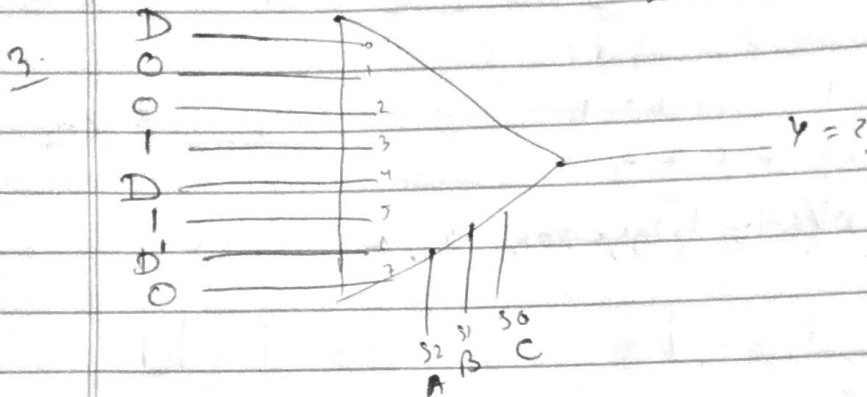
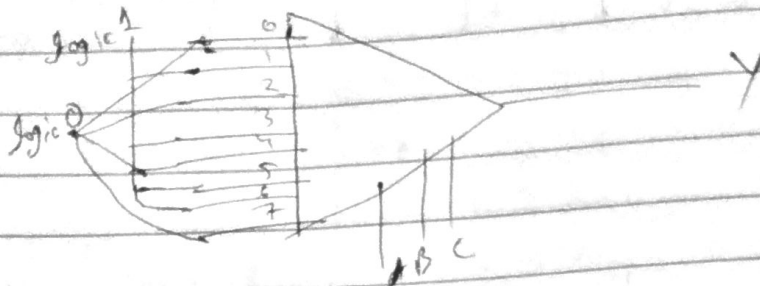
or, we can use 3 input



	D ₀	D ₁	D ₂	D ₃	D ₄	D ₅	D ₆	D ₇
\bar{A}	1	1		1	1			
A	1	1						1
	1	1	0	\bar{A}	\bar{A}	0	0	A

logic 0

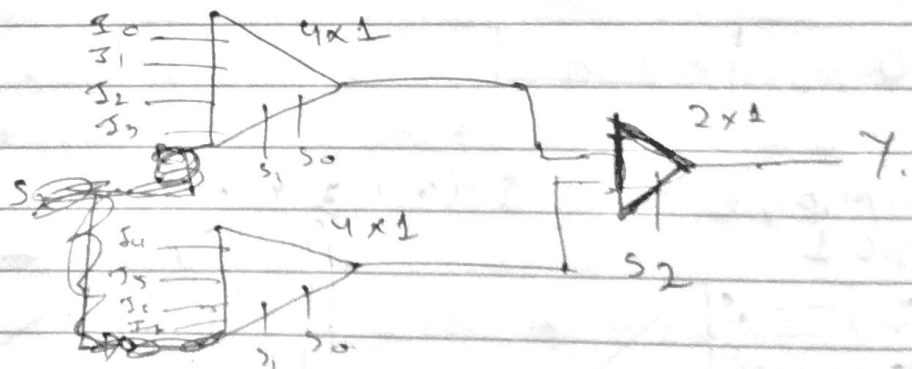
2b. $F(A, B, C) = \Sigma(1, 3, 5, 6)$



$$Y = \bar{A}\bar{B}\bar{C}D + \bar{A}B\bar{C} + A\bar{B}\bar{C}D + A\bar{B}C + AB\bar{C}\bar{D}$$

4.) we require 4 4×16 decoder and 1 2×4 decoder

1.) 8×1 using 4 2×1 multiplexers



5a) $F(A, B, C) = \Sigma(1, 3, 5, 6)$
 $= \Sigma(0, 2, 4, 7)$

Decoder 3 \times 8

