

Solution:

hex, $f = \Sigma (0, 2, 3, 4, 7)$

a) Multiplexer:

hex, $2^n = 2^3 = 8$ So, 8:1 mux.

So, the mux has 8 input lines, 3 selection lines and one output.

	I_0	I_1	I_2	I_3	I_4	I_5	I_6	I_7
A'	(0)	1	(2)	(3)	(4)	5	6	(7)
	1	0	1	1	1	0	0	1

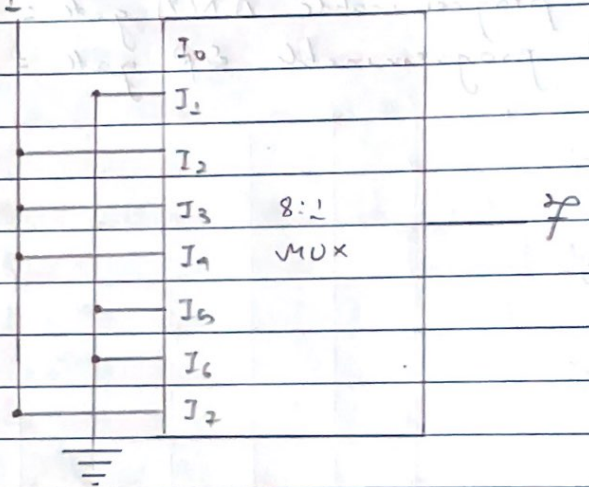
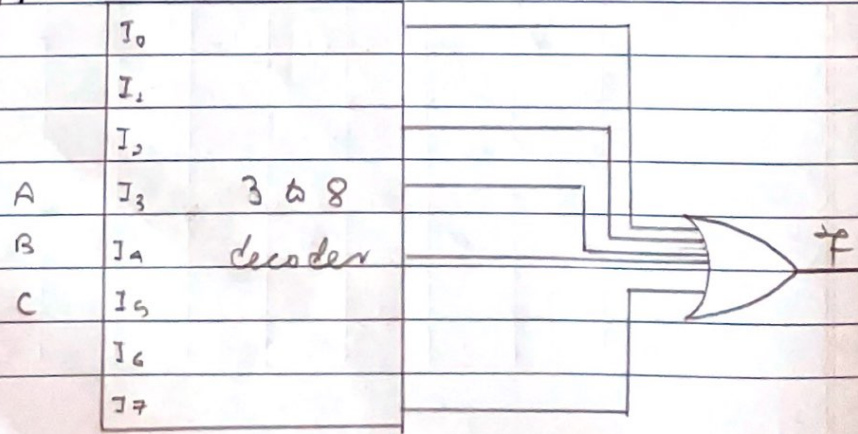


Fig. Block diagram of 8:1 MUX

b) Decoder:



c) $P \rightarrow A$

here, $f = \Sigma(0, 2, 3, 4, 7)$

Using K map,

A \ BC	00	01	11	10
0	1		1	1
1	1		1	

$\therefore f = B'C' + BC + A'B$

