(1)

15V

[10]

$i_c \downarrow$ $5K\, \Omega$ _D

C $\bullet V_o$

$100k\Omega$ B $\quad \beta = 75$

5V

i_B

E

$\downarrow i_E$

a) Assume the BJT is in active mode, find
   i) i_B , ii) i_c , iii) i_E ,
   iv) V_o

b) Is the assumption correct?

Verify

(b)

(i)

5V

10K

Y = ?

C

A

B

$\bar{A}$

$\bar{D}$

D

D

(ii)
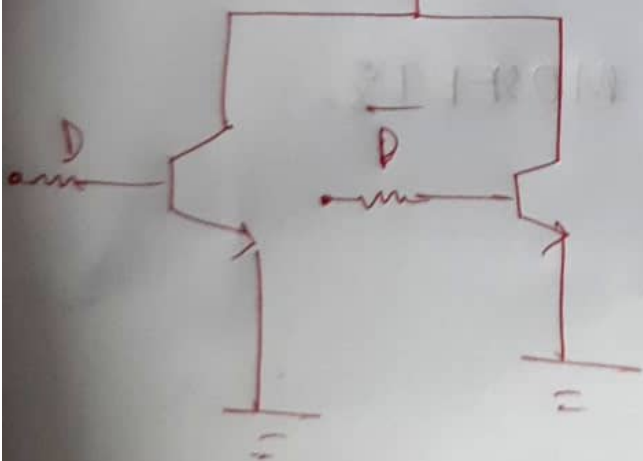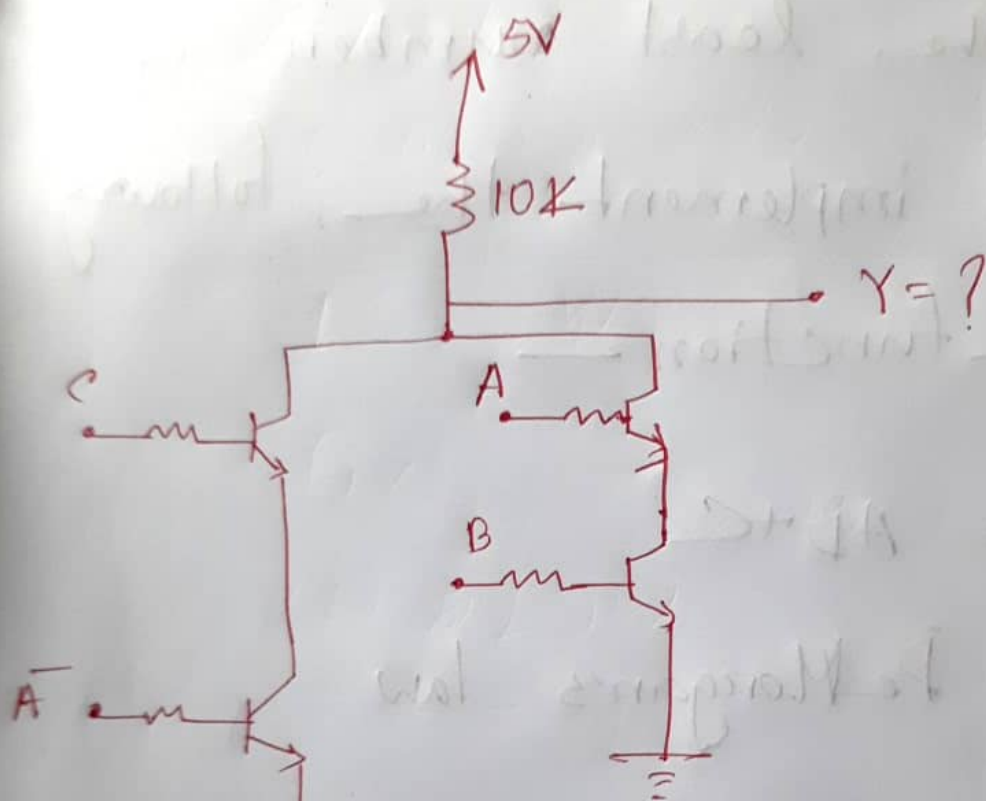
② = find out the logic function of Y.

Bonus

(i)

Using the least number of Mosfels implement the following logic function —

$$Y = AB + C$$

Hint : De Morgan's law

(ii)

Implement using MOSFET's, use 'S Model'

$$Y = \overline{AB} + \overline{(C + D)}$$