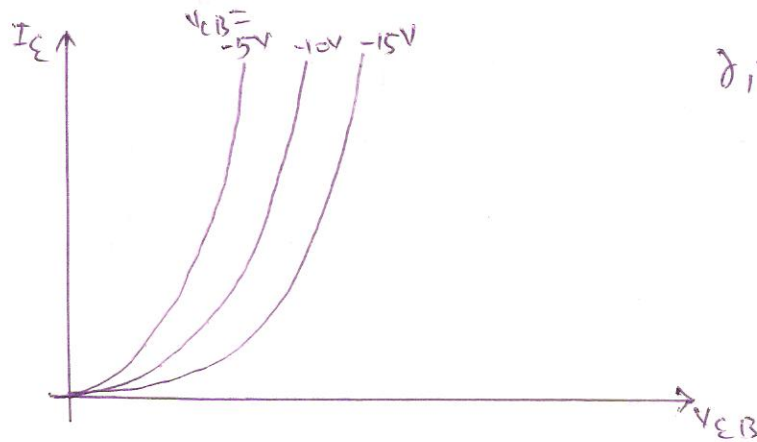


ASSIGNMENT-5

Ques Explain input and output characteristics of a transistor in C.B. configuration?

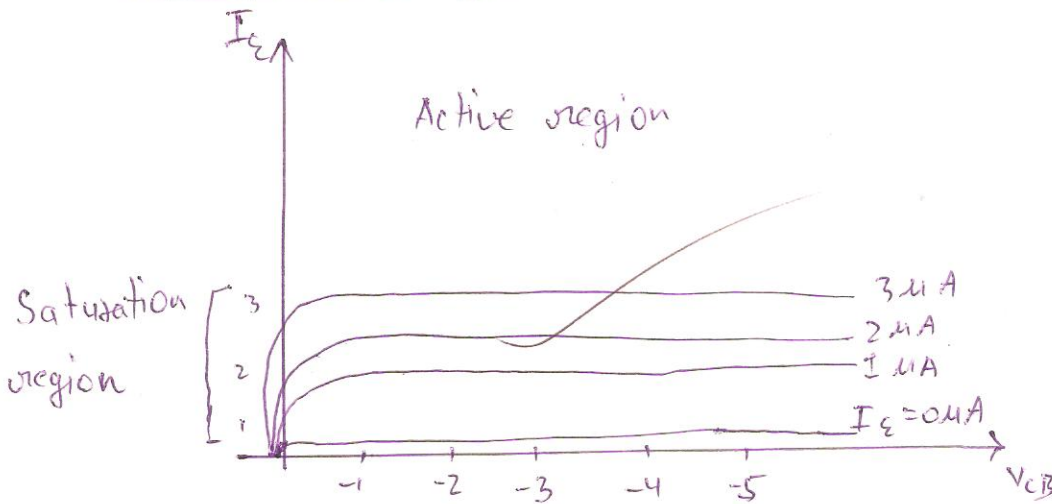
Ans → (i) I/P Characteristics →



$$\delta_i = \frac{\Delta V_{EB}}{\Delta I_E}$$

It is the curve plotted b/w I_E and V_{EB} at constant V_{CE} it is like a diode characteristics in forward region as V_{EB} is \uparrow I_E slightly for V_{EB} so, it is a better diode $I_E \uparrow$ rapidly with a small rise in V_{EB} so, input resistance is small.

(ii) O/P Characteristics →



$$I_C = \alpha I_E + I_{CBO}$$

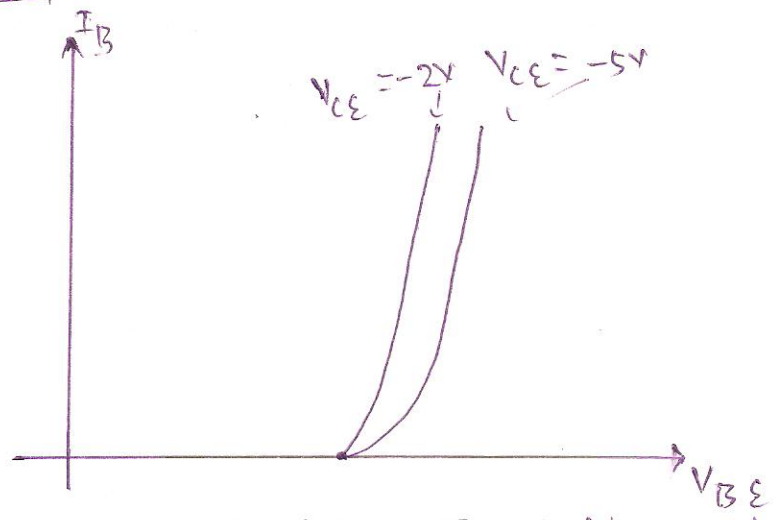
O/P Resistance = δ_o

$$\delta_o = \frac{\Delta V_{CB}}{\Delta I_C} \quad (\text{at constant value of } I_E)$$

It is a curve plotted b/w I_C & V_{CB} at constant I_E .
 In active region collector base reverse biased so, $I_C = I_E$
 transistor is operated in this region curves are flat a
 large change in V_{CB} gives very small change in I_C so,
 high o/p resistance when V_{CB} is +ve collector base junction
 is forward biased $I_C \uparrow$ abruptly this is saturation region.
 at $I_E = 0$, $I_C \neq 0$, I_C is due to this is saturation
 region at $I_E = 0$, $I_C \neq 0$, I_C is due to I_{CBO} so, this region
 is cut-off region.

Que-2 Draw and explain the static characteristics of a transistor in CE configuration?

Ans → (i) 9/P Characteristics :->



The curve plotted b/w I_B & V_{BE} at constant collector
 ammeter voltage V_{CE} these curves are similar to
 common base mode. the only diff. is that $I_B \uparrow$ less
 rapidly with the increase in V_{BE} . So, Input resistance
 of common emitter > common base mode. R_i is ratio of
 change in V_i to the input I_i at constant V_{CE} .

(ii)

