NAME : B SUSMITHA

BRANCH : CSE

SEC : I

ROLLNO : 20JR1A0505

SUBJECT : BEEE

NO OF PAGES WRITTEN :- 7

1) Draw and explain full wave rectifier?

This rectifier circuit consists of the voltage source, two diodes and a resistive load connected as shown in fig

During +ve half cycle.

D_1 → Forward bias (closed switch)

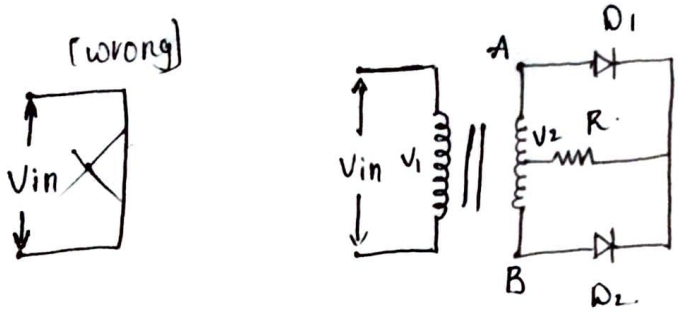
D_2 → Reverse bias (open switch)

During -ve half cycle.

D_1 → Reverse bias (open switch)

D_2 → Forward bias (closed switch)

Figure:



2) Define slip, synchronous speed of Induction motor?

Slip: The difference between the synchronous speed 'N_s' of the rotating stator field and the Actual rotar speed 'N_r' is called 'slip'

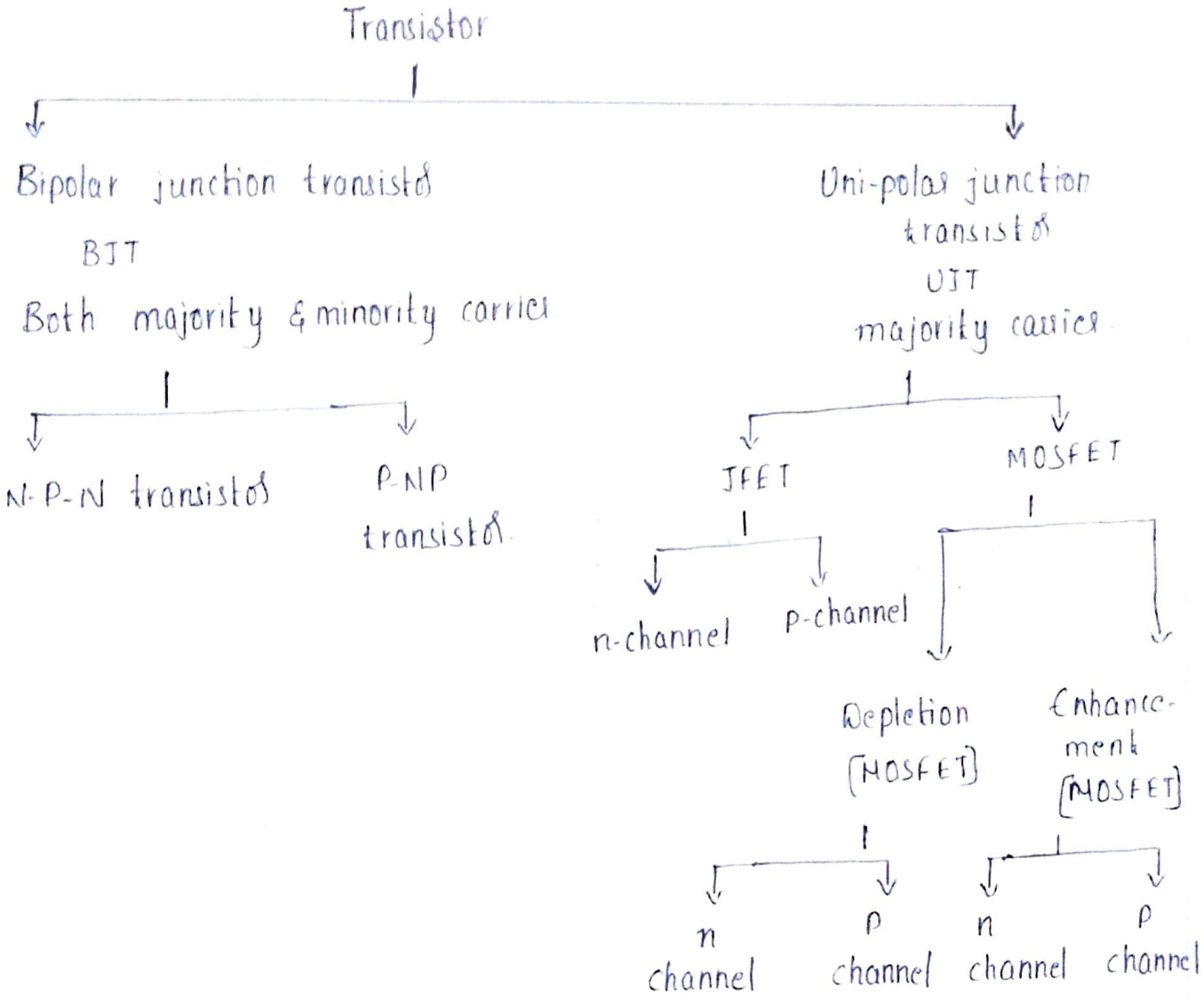
$$\% \text{ of slip} = \frac{N_s - N_r}{N_s} * 100$$

The synchronous speed is the speed of the revolution of the magnetic ϕ field. in the stator winding of the motor. It is the speed at which the electro-motive force is produced by the alternating machine

The synchronous speed is given by the relation shown below.

$$\boxed{N_s = 120 f/p}$$

3] Explain classification of transistors?

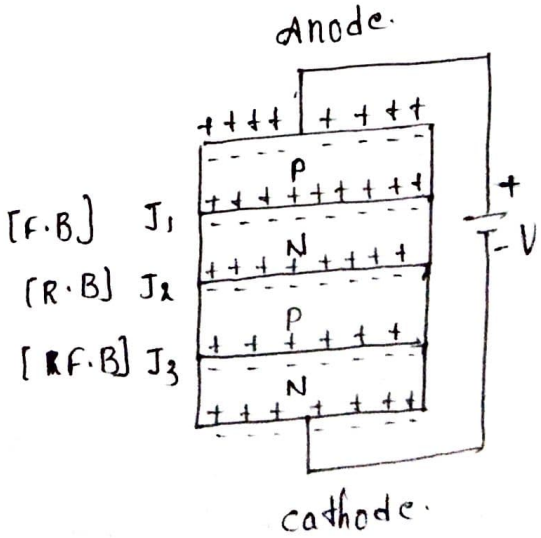


4] Explain operating regions of SCR?

SCR operates mainly in these modes:

1) Forward Blocking mode.
2) Forward conducting mode.
3) Reverse Blocking mode.

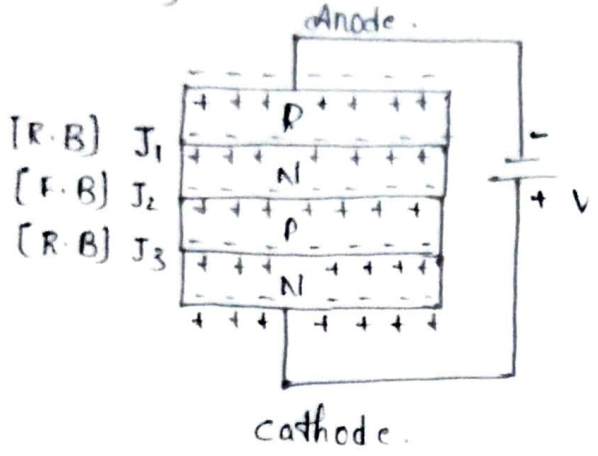
* **Forward Blocking Mode:**



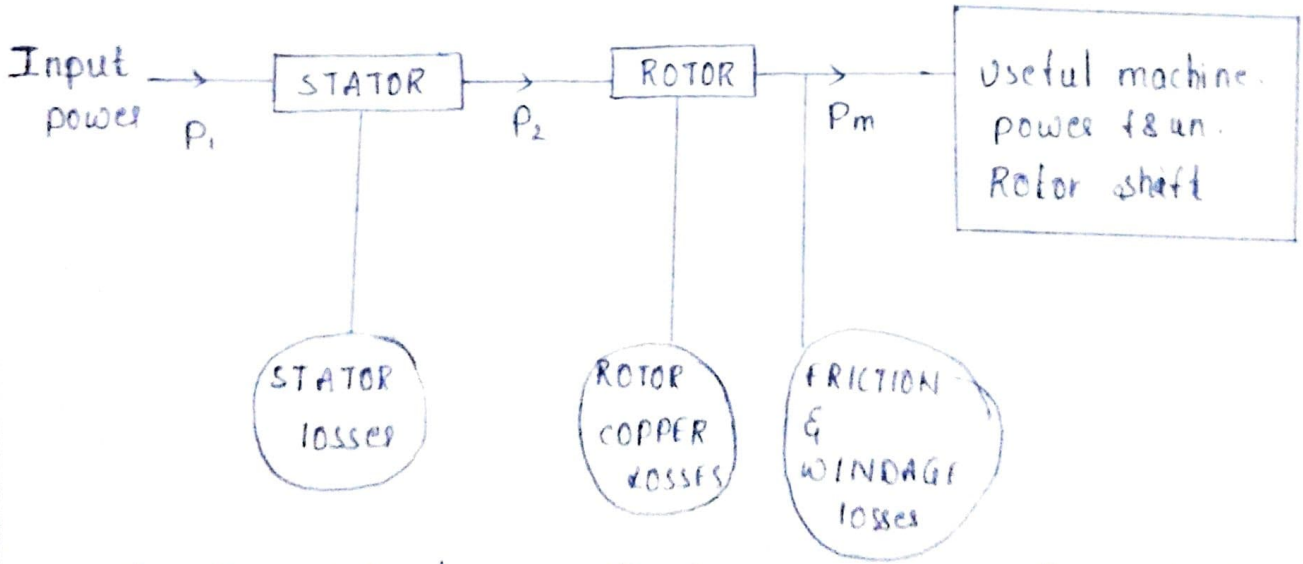
* Forward conducting mode:

When the anode to cathode forward voltage is ↑ with the angle gate circuit open available avalanche breakdown occurs in junction J_2 and the large amount of currents stands flowing through the device.

* Reverse blocking mode:



5] Explain the power flow stages in I.M and give the relation between $P_2 : P_c : P_m$?



$P_2 - P_1$ = stator losses $P_r = P_2$ - rotor copper losses $P_m = P_1$ - Friction & windage losses.

$$\frac{P_2 - P_m}{P_2} = \frac{\text{Rotor copper losses}}{\text{Rotor input}} = \boxed{\frac{N_s - N_r}{N_s} = s}$$