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Part B - Exp - 3

Aim:- To perform speed control of three phase induction motor using auto transformer by changing

Apparatus:- Voltage, ammeter, voltmeter, auto transformer, connecting wire. Three phase induction motor, wattmeter, tacometer.

Theory:- Three phase motor works on Faraday's law of electromagnetic induction the speed of three phase motor can be changed by using three phase auto transformer. The speed of the three phase can be changed by the supply voltage also change by i) Stator ii) Rotor paramater.

The expression for actual speed of motor can be given by $N = N_s(1-s)$

Circuit diagram:-

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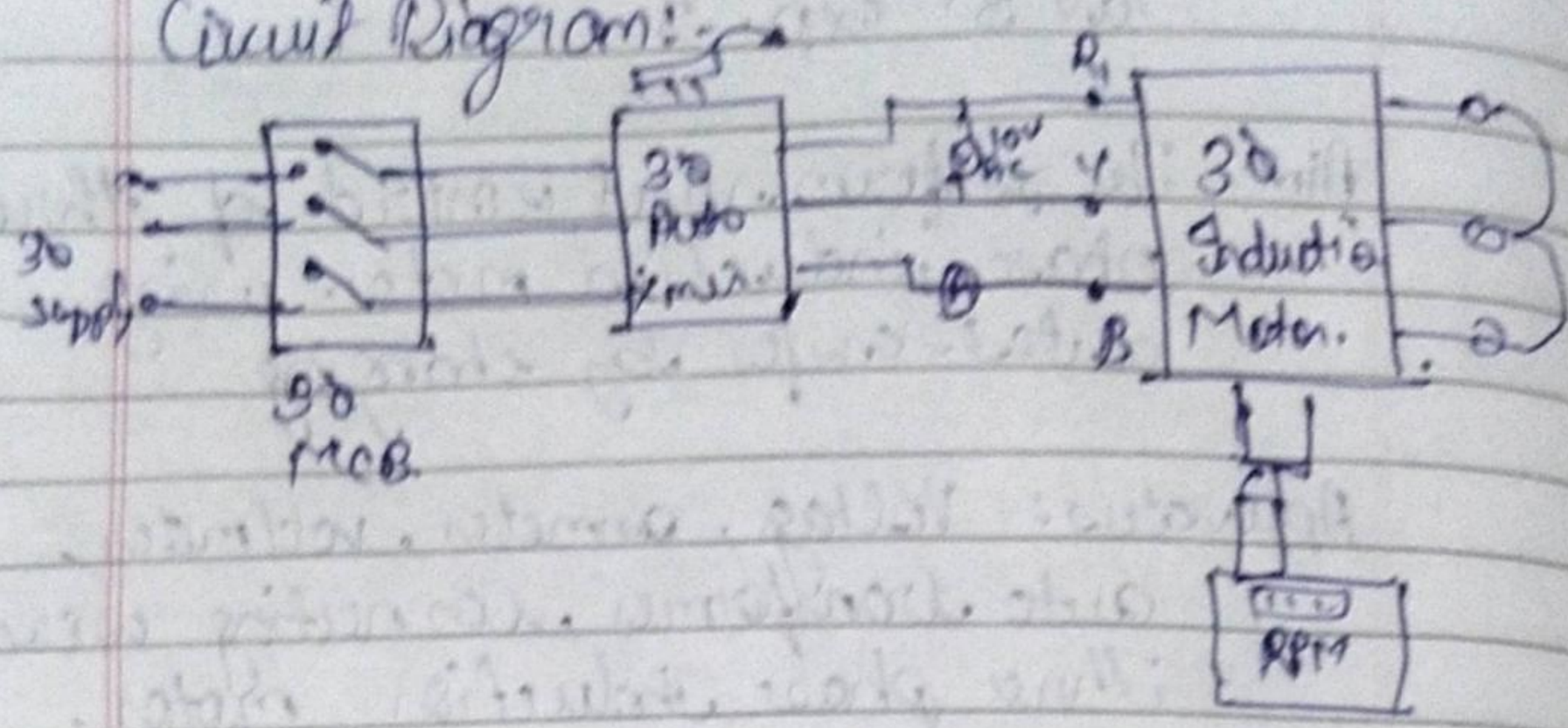
Circuit Diagram:-



Procedure:-

1) Make the connection as per circuit diagram and connect three phase ammeter & phase with the proper rating.

2) Connect auto transformer and vary voltage. connect voltmeter in between terminals.

3) Connect two wattmeter to measure power. Connect ammeter across any of phase to measure current and using tachometer measure RPM.

4) Switch on the supply. Note down the accurate reading.

Table:-

Sr. No	Voltage (V)	Current (A)	Speed (rpm)
1)	400	4.4	1496
2)	398	5	1483
3)	396	5.3	1464
4)	392	6.5	1432
5)	390	7	1430
6)	389	7.5	1425
7)	386	8	1414

Conclusion:- Here from the above experiment we have succesfully observed the variation of speed of three phase motor with varing the three phase AC input supply by using three phase autotransformer.