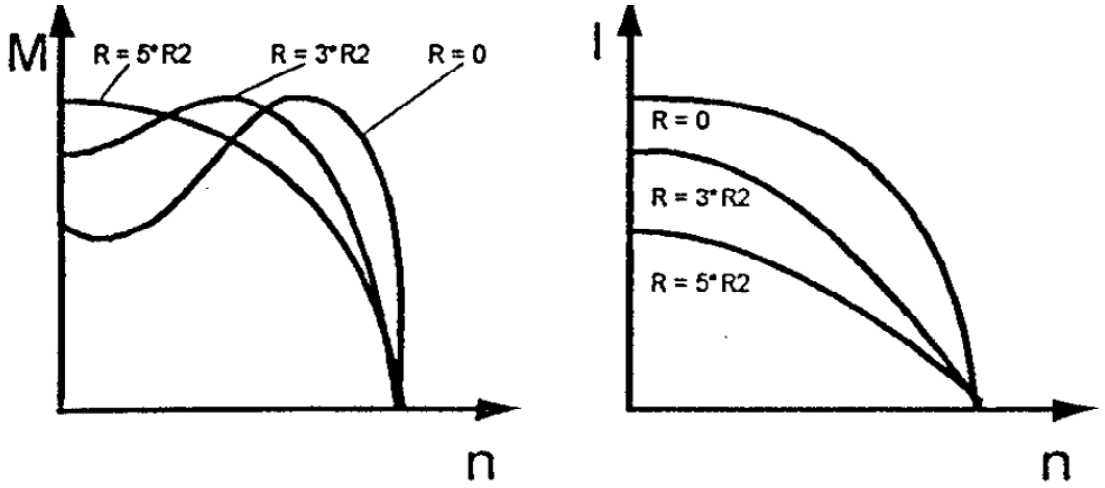
Checking the performance and Load characteristics of an induction machine

PRESENTATION OF THE PROJECTX-FINAL LEVEL 1.

Learning Outcomes

- Measure and assess (or interpret) electrical quantities (or values) of components in electrical circuits and systems



R = Resistance of the starter
R2 = Resistance of the rotor winding

Learning Outcomes

- Recognize a three-phase asynchronous motor from the rating label and terminal board.

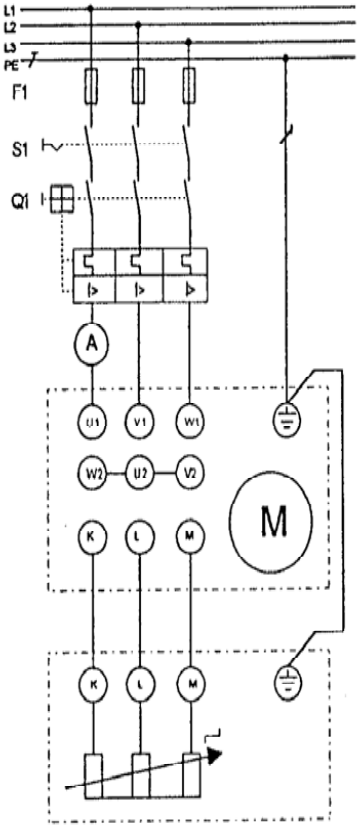
Learning Outcomes

- Recognizing the characteristics of induction machines, carrying out tests and describing the formation and performance

Brief description of the Practice

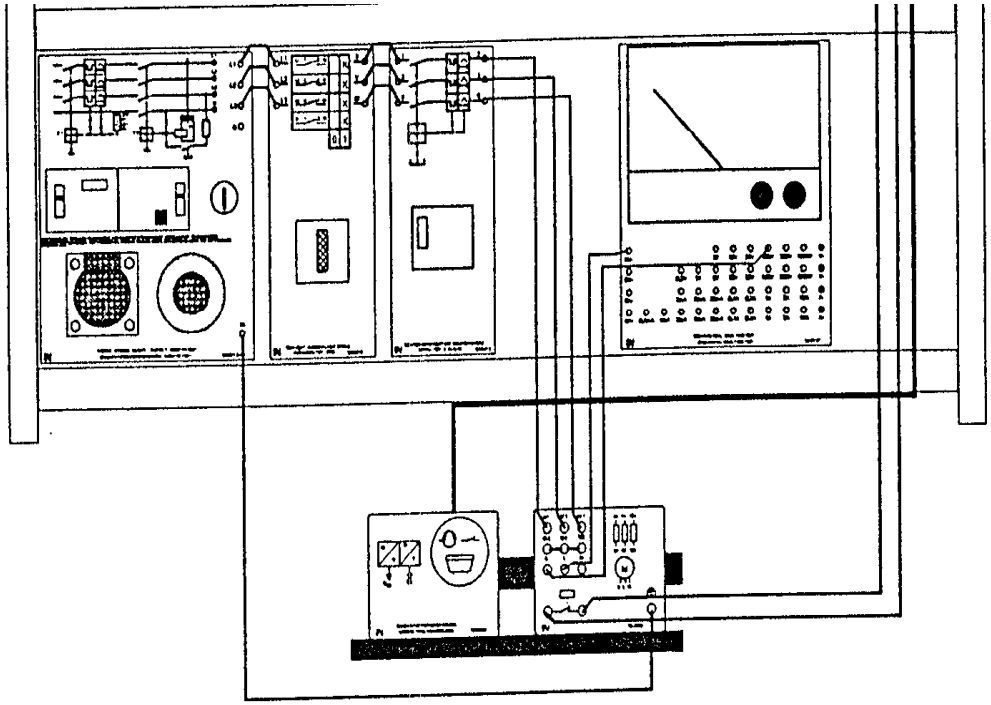
- Recognize a three-phase asynchronous motor from the rating label and terminal board
- Connect an induction motor with slip-ring rotor and operate the motor for the purpose of recording the load characteristics

Circuit Diagram



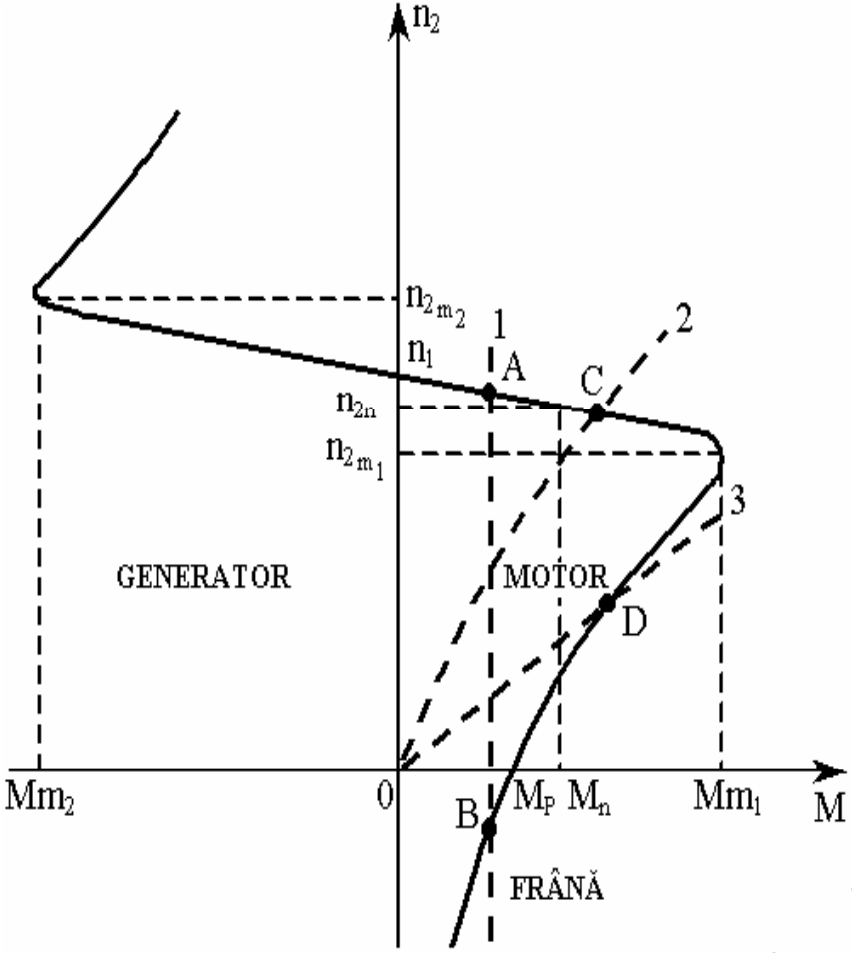
Brief description of the Practice

- Calculate the delivered power, the power factor, the apparent power, efficiency and slip.



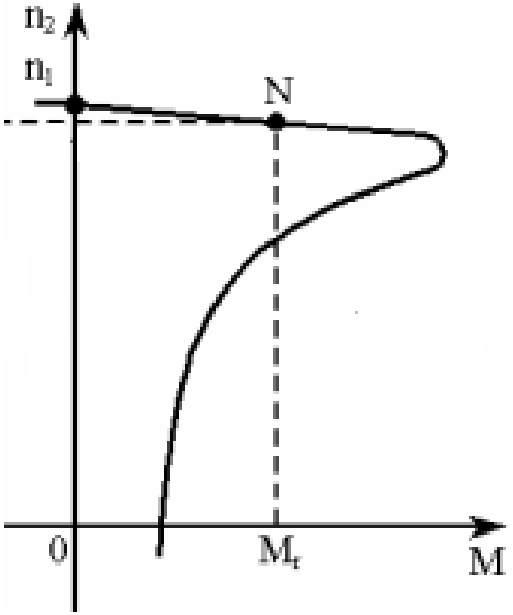
Brief description of the Practice

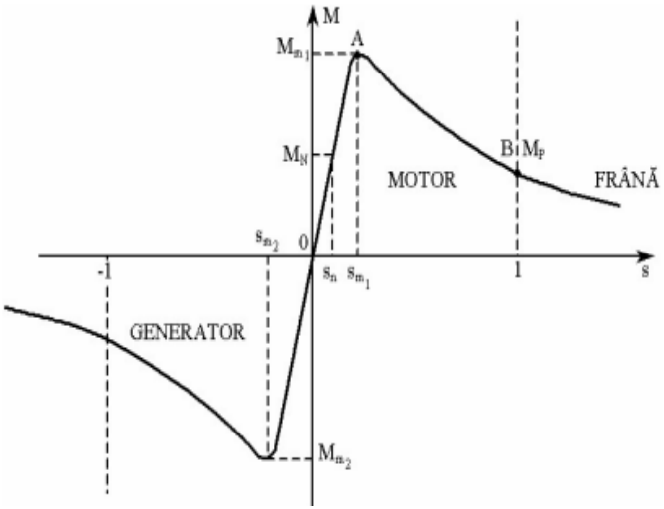
•Draw the load characteristic curves from the values obtain by measurements and calculations.



Brief description of the Practice

- Indicate the value of nominal torque on the characteristic curves.
- Comment on the shape of the characteristic curves.





Steps or activities to be performed by the student

- Copy the details from the motor rating label and the terminal board annotation.
- Measure the stator winding resistance
- Assemble the circuit, as shown in the diagram.
- Before operating the motor completing the setting of ammeter, voltmeter.
- Operate the motor. Set the torque on the control unit, to the value given.
- At each torque setting, measure the current of motor, the speed *n*, the power factor, the voltage, the consumed electrical power.
- Enter the measured values in table.