6 Spindle Loop

6.4.1 Draw a circuit for a 220 Vac 3ϕ source that demonstrates:
a.) Thyrister rectification.
b.) Transistor rectification.
c.) Diode rectification.
d.) Calculate the maximum level of rectified DC voltage

6.4.2 Sketch a simple block drawing of a DC spindle drive showing the :

a.) Main Circuit for the Armature.
b.) Main Circuit for the Field.
c.) Control Circuit showing the command and feedback speed.
d.) Control Circuit showing the firing circuit.

6.5 Sketch a simple block diagram of the following circuits used in an AC spindle drive.

a.) A passive converter section.
b.) An active converter section.
c.) Inverter
d.) Control and base firing signals

6.6 For a DC spindle motor:

a.) Describe an equivalent circuit model for the motor.

b.) Sketch the armature voltage and field current across a range of typical motor rpm.

6.7 For an AC motor:

a.) Describe an equivalent circuit model for the motor.

b.) What are the normal resistance readings for the terminals of a 3ϕ squirrel cage induction motor?