



**DARBHANGA COLLEGE OF ENGINEERING**

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**Department of Electrical and Electronics Engineering  
Power Electronics (031609)**

**Assignment I**

1. Explain structure and operating principal of power transistor.
2. Explain structure and operating principal of MOSFETs.
3. Explain structure and operating principal of SCR.
4. Explain structure and operating principal of IGBT.
5. Explain structure and operating principal of UJT.



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**Assignment II**

1. Explain structure and circuit symbol of SCR.
2. Explain operating principal of SCR.
3. Explain terminal characteristics of SCR and related terms of V-I characteristics.



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**Assignment III**

Draw the  $V_o$  (output voltage) and  $I_o$  (output current) and other related waveforms for single phase full wave controlled rectifier, bridge connection (B-2), with R and RL load also explain the waveforms in SCRs conducting and non conducting states. Derive general expression for average and rms value of the output voltage waveform.



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**Assignment IV**

Explain different methods of Pulse width modulation control of inverters (DC-AC converters) with neat and clean diagram.