

JNST/CBGS/PED/VI | 29.11.2016

Power Electronics Drive

QP CODE : 598003

[3 Hours]



[Total Marks: 80]

- N.B. :** 1. **Question 1** is compulsory.  
2. Solve **any three** from remaining.  
3. Assume suitable data if required and justify it.

- Q.1) Attempt any four [20]  
1) Explain Punch through IGBT  
2) Explain class C commutation circuit  
3) Write short notes on reduction of harmonic distortion.  
4) List out advantage and disadvantages of series inverter and parallel inverter.  
5) Explain Type B chopper
- Q.2) Design an AC power circuit using TRIAC and phase shift network. Input 230 V, 50 Hz, 1 $\phi$ -AC load 50 $\Omega$ . Output required is 50% to 100% variable power. [20]
- Q.3) a) Explain variable AC induction motor drive. [10]  
b) Explain basic principle of Dielectric heating. List its advantages and applications. [10]
- Q.4) a) Explain fan regulator using diac triac scheme. [10]  
b) Explain snubber circuit with neat waveforms. [10]
- Q.5) a) Explain Boost regulator with the help of circuit diagram. [10]  
b) Explain the second breakdown in Power BJT [10]
- Q.6) a) Explain symmetric semiconverter. [10]  
b) Explain circuit diagram of full bridge inverter with FW diode. [10]
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