

Roll No .....

## MEPE - 104

M.E./M.Tech., I Semester

Examination, December 2014

### Forced Commutation circuits

Time : Three Hours

**RGPVONLINE.COM** Maximum Marks : 70

Note : Attempt any five questions. All questions carry equal marks.

1. a) Discuss the classification of different types of 3 phase inverters.  
b) What are the different voltage control techniques for three phase inverters?
2. What do you understand by Harmonic control in inverters? Discuss the important PWM techniques for harmonic reduction in inverters.
3. a) Differentiate between current source and voltage source inverters.  
b) Discuss frequency control and phase sequence control in inverters.
4. a) Classify different chopper circuits in detail based on quadrant of operation.  
b) What do you understand by switch mode power supplies?
5. Discuss the following with respect to power supplies.
  - a) Resonant mode operation
  - b) Square wave switching

6. a) Give the principle of induction heating and discuss medium frequency supplies for induction heating.  
b) What do you understand by Dielectric heating? Give its relative merits and applications.
7. a) What are SRM drives? Discuss the power supplies of SRM drives.  
b) Give the block diagram of a typical VFD and discuss its control scheme in detail.
8. Write short notes on any two of the following
  - i) Ferro resonance
  - ii) Induction melting and welding.
  - iii) High frequency sources for fluorescent lamps
  - iv) Power supplies for D.C. drives

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