

Total No. of Questions : 8]

[Total No. of Printed Pages : 2

Roll No

MEPE-104**M.E./M.Tech. I Semester**

Examination, December 2017

Forced Comm. Circuits*Time : Three Hours**Maximum Marks : 70***Note:** i) Attempt any Five questions.

ii) All questions carry equal marks.

1. a) What is the need of controlling the output voltage of an inverter? What are different techniques used to control the output voltage of inverter? Explain in brief.
b) Explain current source inverter with the help of diagram and waveform. Write advantages and disadvantages also.
2. Describe the power circuit of a three phase bridge inverter using six thyristors and six diodes with 120° mode of operation and voltage waveform. Also write line and phase voltage expressions.
3. a) What is the need of harmonics reduction in output voltage of an inverter? What are the different methods used for harmonic reduction in output of an inverter? Explain.
b) Explain how phase sequence control can be achieved in three phase inverter.

[2]

4. a) Explain operating principle of DC chopper with suitable diagram. Draw voltage and current waveform of chopper. Derive expression for RMS and average output voltage.
b) Draw circuit diagram of two-quadrant chopper and explain its working.
5. Write short notes on :
a) Resonant mode power supply
b) Switched mode power supply
c) Ferro Resonant
6. a) What is Induction Heating? Explain working of medium frequency induction furnace.
b) Compare dielectric heating with induction heating.
7. a) Discuss control circuit used for the SRM drive with the help of diagram.
b) Explain power supply for SRM drive with the help of block diagram.
8. Write short notes on : (Any two)
a) Commutation technique for inverter
b) Safe operating area
c) Laser power supply
