Total No. of Questions :8] *[Total No. of Printed Pages :2*

 Roll No .....

MEPE-104

M.E./M.Tech. I Semester

Examination, June 2017

Forced Communication Circuits

Time : Three Hours

Maximum Marks : 70

Note: i) Attempt any Five questions out of eight.
ii) All questions carry equal marks.

1. a) Explain with the help of diagram and waveform for current source inverter, write its advantages and disadvantages also. 7
   b) Explain sinusoidal pulse width modulation technique for voltage control of three phase inverter. 7

2. Explain 120° mode of operation of three phase inverter when it is connected across three phase resistive load. Draw phase voltage and line voltage waveforms. 14

3. a) Discuss the reason of harmonics generation in inverter circuits. What are the adverse effects of these harmonics at supply side and load side? 7
   b) Explain how phase sequence control can be achieved in three phase inverters. 7

4. a) Describe with diagram the operation of "Class D" chopper. Draw its quadrant operation diagram also. 7

   b) A step up chopper has input voltage of 220V and output voltage of 660V. If the non-conducting time of thyristor chopper is 100μs, compute the pulse width of output voltage. In case pulse width is halved for constant frequency operation, find the new output voltage. 7

5. Explain the working of voltage commutated chopper with its different operating modes. Also draw current and voltage waveforms. 14

6. a) Describe with diagram and waveforms, Resonant mode operation of power supply. 7
   b) Explain in detail the requirement and fulfillment of power supply for Switched Reluctance Motor drive. 7

7. a) What is induction heating? Explain the working of medium frequency induction furnace. 7
   b) Discuss the role of data sheets of power devices in its selection for a particular application. Write proper explanation for it. 7

8. Explain any two of the following terms: 14
   a) Laser power supply
   b) R.F. Generators
   c) Switch mode power supply
   d) Induction welding

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