QUESTION BANK 1 (I Scheme)

Course: Industrial Drives & Control **Course Abbreviation: IDC**
Course Code: (22629) **Unit Test: I**
Semester: 6I **Program Code: EE**

CHAPTER 1: Basic of Electrical Drives (10 mks)

2 Marks

1. Draw block diagram of the Basic elements of electric drives.
2. State the need of electric drives.
3. Write the classification of motor duty class.
4. State four functions of electric drives.

4 Marks

5. Explain the Block diagram of basic elements of drives.
6. List different factors for selection of electric drives.
7. Describe the four quadrant operation of induction motor with speed torque characteristics.
8. List the duty class of motor and describe continuous duty class.
9. What is braking of electric motors? What are the types of braking? Explain any one.
10. Draw the three Characteristics of dc series motor with their relations.
11. Explain speed torque characteristics of three phase Induction motor.

CHAPTER 2: DC Drive using converters (16 mks)

2 Marks

12. State the types of SCR controlled drives.
13. Draw circuit diagram of half wave converter.
14. Draw power circuit of three phase semi converter. State the equation of average armature voltage.
15. Draw only circuit diagram of single phase dual converter.

4 Marks

16. Compare semi converter drives and full converter drives on the basis of 1) Quadrant operation 2) Regenerative braking 3) Power flow 4) harmonic contents
17. A semi converter operated from single phase 230 volt, 50 Hz supply drives a 10HP, 200 volt, 1500rpm, separately excited DC motor. The rated armature current is 40A, the motor parameters Ra=05ohm, La=10mH. KaØ constant =0.2V/rpm. Find out the following parameters α = 30 0 i) average armature voltage, ii) back emf of motor iii) speed of motor iv) motor torque.
18. Draw labeled full wave converter drive using separately excited motor & state the equation for armature voltage.
19. Draw circuit diagram & waveforms of three phase dual converter using SCR and describe working principle with waveforms.
20. Explain reversible SCR drive.

CHAPTER 3: DC Drive using choppers (8 mks)

2 Marks

21. Classify chopper considering their quadrant operation.

4 Marks

22. With neat diagram & waveforms, explain operation of D.C. chopper using power MOSFET.
23. Describe class A chopper with circuit diagram.
24. State suitable type of chopper for very large load current requirement, justify with neat sketch.
25. Draw and describe class C chopper drive.