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Question Paper Code : X65637

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2020
Seventh Semester
Electrical and Electronics Engineering
080280075 – ELECTRIC DRIVES AND CONTROL
(Regulations 2008)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. List out the types of load torques.
2. What are the factors that influencing the selection of electric drives ?
3. List out the advantages of chopper control fed drive.
4. What is TRC scheme ?
5. What are the advantages of static rotor resistance control over conventional methods ?
6. What is the principle of vector control of induction motor drive ?
7. Write some application of synchronous motor drives.
8. What is meant by commutator – less DC motor ?
9. Which type of motor is suitable for lift ? Why ?
10. Write the merits and demerits of digital control of motor.

PART – B

(5×16=80 Marks)

11. a) i) Explain in detail the multi quadrant dynamics in the speed-torque plane. (8)
ii) Discuss the different modes of operation of an electrical drives. (8)

(OR)



- b) i) Explain in detail about load equalization. (8)
ii) Explain the various types of braking of a DC separately excited motor. (8)
12. a) Explain the operation of a single phase fully controlled converter fed separately excited DC motor with neat waveforms and derive the speed torque characteristics. (16)
(OR)
- b) i) Explain using a power circuit the working of a single phase full converter fed the series motor drive. (8)
ii) Explain the four quadrant operation of a DC motor with the help of a chopper circuit. (8)
13. a) i) Explain the stator voltage control of scheme for the speed control of 3-phase IM drives. (10)
ii) Discuss the operation of slip power recovery scheme. (6)
(OR)
- b) Explain the principle of vector controlled induction motor drives with its diagram. (16)
14. a) Explain in detail about the open loop v/f control and self controlled mode of the synchronous motor. (16)
(OR)
- b) i) Explain the control of a commutator less DC motor. (8)
ii) Describe the operation of synchronous motor fed from cycloconverter. (8)
15. a) Explain about the digital techniques used in speed control for any one drive. (16)
(OR)
- b) Explain the PLC based control drives with its circuit diagram. (16)
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