BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)
B.Tech.Sem - VII ELECTRICAL : WINTER- 2022
SUBJECT : AC-DC DRIVES

Day : Wednesday

Time : 02:30 PM-05:30 PM

Date : 07-12-2022   **W-13337-2022**   Max. Marks : 60

N.B.

1)   All questions are **COMPULSORY.**
2)   Figures to the right indicate **FULL** marks.
3)   Assume suitable data wherever necessary.

Q.1 **a)** What is load equalization criteria? Explain in brief.   **(05)**

    b) How do you classify drives? Explain in brief about electrical drives.   **(05)**
OR
    a) What are equivalent values of drive parameters?   **(05)**

    b) Write a note on steady state stability.   **(05)**

Q.2 **a)** What are different types of braking? Explain regenerative braking in brief.   **(05)**

    b) Draw and explain circuit diagram of Rheostatic braking.   **(05)**
OR
    a) Explain electrical braking methods for three phase induction motor.   **(05)**

    b) What is drawback of plugging type braking? How to overcome that drawback.   **(05)**

Q.3 **a)** What are different challenges need to be faced in case of closed loop control system?   **(05)**

    b) What is use of cyclo-converter in case of speed control applications?   **(05)**
OR
    a) Explain role of chopper in controlling DC series motor speed.   **(05)**

    b) What is PID controller in case of closed loop control system?   **(05)**

Q.4 **a)** How do you differentiate between VSI and CSI?   **(05)**

    b) What are different speed control methods related to solid state controllers? Explain any one in brief.   **(05)**
OR
    a) Draw and explain circuit diagram of multilevel inverter.   **(05)**

    b) Write a note on variable frequency drive.   **(05)**

Q.5 **a)** Explain the phenomenon of derating of motor.   **(05)**

    b) Explain heating and cooling of drives with necessary waveforms.   **(05)**
OR
    a) What are different energy saving techniques in case of starting and running of induction motor? Explain in brief.   **(05)**

    b) What is effect of harmonic current on drive operations?   **(05)**

Q.6 **a)** Draw and explain circuit diagram of stepper motor drive.   **(05)**

    b) Write a note on latest trends in electrical drives.   **(05)**
OR
    a) Explain commutatorless DC motor drives with application.   **(05)**

    b) Explain servo motor drive with neat circuit diagram.   **(05)**

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