00585

BIEEE-016

B.Tech. - VIEP - ELECTRICAL ENGINEERING

(BTELVI)

Term-End Examination, 2019

BIEEE-016 : INDUSTRIAL DRIVES

Time : 3 Hours]   [Maximum Marks : 70

Note : Attempt **any seven** questions. **All** questions carry **equal** marks. Use of scientific calculator is permitted. Missing data, if any, may be suitably assumed.

1.   What are the advantage of Electrical drives ? State the essential parts of electrical drives. What are the functions of a power modular ?   [10]

2.   What do you mean by "Load Equalization" ? Why is flywheel not used with a synchronous motor for load equalization ? Is it possible to apply load equalization for reversible drives ? Discuss.   [10]

3.   Describe the operation of closed-loop torque control scheme and it's application.   [10]

4.   A 220 V, d.c. shunt motor takes 50 A, when giving its rated output at 1500 rpm, it's total resistance is $0.25\,\Omega$. Determine the resistance to be added in series with the motor to obtain the rated torque at a) starting b) 1000 RPM.   [10]

5.   (a)   Explain the speed control of a dc motor with the help of a chopper.   [5]

     (b)   Explain Slip power recovery scheme for 3-phase induction motor drive.   [5]

6.   With a suitable example of a motor driving a hoist load, Explain the speed Torque convention for four Quadrant operation of an Electric drive.   [10]

7.   Explain the working of Solar and Battery powered drives.   [10]

8.   Explain the 120° 'OR' 180° degree mode of operation of Voltage source inverter.   [10]

9.   Explain the Brushless dc motor for servo application. [10]

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