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B.E. / B.TECH. DEGREE EXAMINATIONS, DEC 2019

Third Semester

EE18352 – ELECTRICAL DRIVES AND CONTROL SYSTEMS*(Mechanical Engineering)***(Regulation 2018)****Time: Three Hours****Maximum : 100 Marks**

Answer ALL questions

PART A - (10 X 2 = 20 Marks)

	CO	RBT
1. Define Drive and Electric Drive.	1	R
2. List the factors affecting the selection of electric drives.	1	R
3. What is slip?	2	R
4. What is the necessity of starter?	2	U
5. What are the different types of choppers?	3	R
6. Mention the various methods of speed control of three phase induction motor.	3	U
7. Difference between open loop control and closed loop control.	4	U
8. List the applications of microcontroller.	4	R
9. Define the term step angle.	5	U
10. List the various types of servo motor.	5	R

PART B - (5 X16 = 80 Marks)

11. (a) Draw the functional block diagram of electric drive and Explain the basic elements of an electric drive system. (16) 1 AN
- (OR)**
- (b) (i) Explain the various classes of duty. (10) 1 U
- (ii) Explain in detail about classification of electric drives. (6) 1 U
12. (a) (i) Explain various methods of braking of DC Shunt Motors with neat diagrams. (8) 2 AN
- (ii) Explain various methods of braking of DC Series Motors with neat diagrams. (8) 2 AN

(OR)

- (b) With a neat diagram explain the operation of four point starter. Also mention the advantages of this over a three point starter. **(16) 2 U**
13. (a) Describe with the help of a connection diagram the ward Leonard method of speed control. Explain its operation at starting, stopping and reversing. State the merits and demerits of this scheme. **(16) 3 AN**

(OR)

- (b) Explain the operation of speed control techniques employed for 3-phase squirrel cage induction motor. **(16) 3 AN**
14. (a) (i) Write short notes on closed loop torque control of drive. **(8) 4 U**
(ii) Write short notes on closed loop speed control of drive. **(8) 4 U**

(OR)

- (b) With a neat diagram explain the closed loop speed control of DC drive using a microprocessor. **(16) 4 AN**
15. (a) Explain the construction and working principle of stepper motor. **(16) 5 AN**

(OR)

- (b) Explain in detail about any two types of power drive circuits for Switched reluctance motor. **(16) 5 AN**