

Reg. No.

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

Third Semester

**EE16351 – ELECTRICAL DRIVES AND CONTROLS***(Common to ME and CH)***(Regulation 2016)****Time: Three Hours****Maximum : 100 Marks**Answer **ALL** questions**PART A - (10 X 2 = 20 Marks)**

	<b>CO</b>	<b>RBT</b>
1. What are the types of electric drives?	<b>1</b>	<b>R</b>
2. State the some of the advantage of an electric drive system.	<b>1</b>	<b>R</b>
3. Write the voltage equation of DC Motor.	<b>2</b>	<b>U</b>
4. List some application of DC series motor?	<b>2</b>	<b>R</b>
5. Why starter are used for DC motors?	<b>3</b>	<b>U</b>
6. What are the various types of reducing starting current of induction motor?	<b>3</b>	<b>R</b>
7. What are the factors on which the speed of a DC motor depends?	<b>4</b>	<b>U</b>
8. What is meant by DC Chopper?	<b>4</b>	<b>U</b>
9. List out the various methods of speed control of three phase induction motor.	<b>5</b>	<b>R</b>
10. Mention the different types of slip power recovery system.	<b>5</b>	<b>R</b>

**PART B - (5 X16 = 80 Marks)**

11. (a) What is electric drive? Draw the functional block diagram of electric drive and Explain the basic elements of an electric drive system. **(16)** **1** **U**
- (OR)**
- (b) Draw the typical temperature rise-time curve and derive the equation for temperature rise in an electric drive. **(16)** **1** **AN**
12. (a) Draw and explain various characteristics of DC Shunt Motor and Series motor. **(16)** **2** **AN**

**(OR)**

- (b) (i) List out the advantages and disadvantages of electrical braking over mechanical braking. (6) 2 U
- (ii) Discuss any two methods of electrical braking in induction Motor. (10) 2 U
13. (a) Draw a neat schematic diagram of a Three point starter and explain its working. (16) 3 U
- (OR)**
- (b) Explain any two types of starting methods of Three phase squirrel cage induction motors with neat sketches. (16) 3 U
14. (a) Discuss the Ward-Leonard speed control system with a neat circuit diagram. Also mention its advantages and disadvantages. (16) 4 AN
- (OR)**
- (b) Explain the chopper fed separately excited dc shunt motor speed control with waveforms. (16) 4 AN
15. (a) Discuss the speed control of AC motors by using three phase AC Voltage regulators. (16) 5 U
- (OR)**
- (b) Explain the working of following methods with neat circuit diagram. (16) 5 AN
- i) Kramer system
- ii) Scherbius system