30/12/24 (AN)

ADDITIONAL CONTROLLER OF EXAMINATIONS ★ AU 600 025 CHENNAI

Roll No. | | | | | | | | | | |

ANNA UNIVERSITY (UNIVERSITY DEPARTMENTS)

B.E. / B. Tech / B. Arch (Full Time) - END SEMESTER EXAMINATIONS, NOV/DEC 2024

MINING ENGINEERING
III Semester
EE5305 & Electrical Drives and Control
(Regulation 2019)

Time: 3hrs Max.Marks: 100

PART- A (10 x 2 = 20 Marks)
(Answer all Questions)

Q. No	Questions	Marks
1	Classify electric drive	2
2	Compare fuse and switch.	2
3	Differentiate constant torque and speed operation.	2
4	Define electric braking.	2
5	How pole changing affect the speed of an induction motor?	2
6	Mention the advantages of slip ring induction motor.	2
7	What are the different types of DC motor starters?	2
8	What is the need for starters?	2
9	Give examples for intermittent loading.	2
10	What are the classes of duty?	2

PART- B (5 x 13 = 65 Marks)
(Restrict to a maximum of 2 subdivisions)

Q. No	Questions	Marks
11 (a)	Explain four quadrant operation of a drive.	13
	OR	
11 (b)	Explain the working of relay and control transformers.	13
12 (a)	Explain the speed control of DC motor with a converter. Draw the waveforms and write the necessary equations.	13
	OR	
12 (b)	Explain Ward Leonard control of DC motor.	13
13 (a)	Explain V/f control of squirrel cage induction motor with necessary circuits and waveforms.	13
	OR	
13 (b)	Explain slip power recovery with necessary circuits and equations.	13
14 (a)	Explain the working of DC motor starter with necessary diagrams.	13
	OR	
14 (b)	Explain the working of AC motor starter with necessary diagrams	13
15 (a)	Explain load diagram with necessary diagrams.	13
	OR	
15 (b)	Explain heating and cooling curve of a drive.	13

PART- C (1 x 15 = 15 Marks)
(Q.No.16 is compulsory)

Q. No	Questions	Marks
16.	A 200 V, 10.5 A, 2000 rpm shunt motor has the armature and field resistances of 0.5 and 400 Ohms respectively. It drives a load whose torque is constant at rated motor torque. Calculate the motor speed if the source voltage drops to 155 V.	15