R20 Regulation *Subject code: 3P3BD*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous, Accredited by NAAC with 'A+' Grade)

B.Tech III Semester Supplementary Examinations, July 2024

ELECTRICAL MACHINES I

(EEE)

Maximum Marks: 70 Date:25.07.2024 Duration: 3 hours

Note: 1.This question paper contains two parts A and B.
2. Part A is compulsory which carries 20 marks. Answer all questions in Part A.
3. Part B consists of 5 Units. Answer any one full question from each unit which carries 10M.
4. Each question carries 10 marks and may have a, b, c, d as sub questions.

	Part-A		
All the following questions carry equal marks (10X2M=20 Marks)		CO	Bloom Tx
1	Define flux, flux density.	1	L1
2	Define relay?	1	L1
3	State the salient features of simplex winding.	2	L1
4	Explain the critical resistance in the dc. shunt generator.	2	L1
5	What is the significance of back emf in a dc motor.	3	L1
6	Draw the speed torque characteristics of dc shunt motor	3	L1
7	Explain the Principle of transformer	4	L2
8	Define transformer?	4	L2
9	Explain the principle of transformer.	5	L1
10	Applications of auto transformer	5	L3
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
11	Discuses the self inductance and mutual inductance of the coil. [10]	1	L1
	OR		
12	Explain about the armature reaction. [10]	1	L1
13	Write classifications of dc machines and their characteristics. [10]	2	L2
	OR		
14	a) Explain voltage buildup process of dc generator. [5] b) Write Types of generators and voltage equations. [5]	2	L4
15	Explain the speed controlled methods of dc motors. [10]	3	L1
	OR		
16	Write the different types of motors, and their characteristics. [10]	3	L2
17	Draw the phasor diagram for RL load 1-ph transformer. [10]	4	L2
	OR		
18	Discus the testing of transformer i)polarity test,ii) back to back test. [10]	4	L2

19	Enplane the parallel operation of single phase and three phase transformers. [10]	5	L2
	OR		
20	Explain the operation and principle of auto transformer and applications. [10]	5	L3