



R20 Regulation

Subject code:3E5BA

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech V Semester Supplementary Examinations, December 2024

ELECTRICAL MACHINE DESIGN

(EEE)

Maximum Marks: 70

Date:31.12.2024

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	What are the types of electrical engineering materials	1	L1
3	Define transformation ratio.	2	L1
4	Define iron space factor.	2	L1
5	Define real flux density.	3	L1
6	What is integral slot winding and fractional slot winding	3	L1
7	What is run away speed.	4	L1
8	State any two methods of cooling the turbo alternators	4	L1
9	Define optimization methods.	5	L1
10	Applications of CAD.	5	L1

Part-B

Answer All the following questions. (5X10M=50Marks)		CO	Bloom Tx
11	What are the limitations in the design of electrical apparatus? Explain in detail. [10M]	1	L2
OR			
12	Explain in detail about specific electric loading and magnetic loading of a rotating machine. [10M]	1	L2
13	Explain briefly on design of core of transformer. [10M]	2	L2
OR			
14	How to design the windings of transformers and explain briefly. [10M]	2	L2
15	State the rules that has to be followed for selection of rotor slots for an induction motor. [10M]	3	L2
OR			
16	Write a note on main dimensions in induction motor. [10M]	3	L2
17	Write a note on main dimensions for synchronous machine. [10M]	4	L2
OR			
18	Explain the SCR and its effect on machine performance. [10M]	4	L2
19	Explain the complex structures of modern machines-PMSMs. [10M]	5	L2
OR			
20	Explain the complex structures of modern machines-BLDCs. [10M]	5	L2