R20 Regulation *Subject code: 3P4BC*

TKR COLLEGE OF ENGINEERING AND TECHNOLOGY

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

B.Tech IV Semester Supplementary Examinations, July 2024

Electrical Machines-II

(EEE)

Maximum Marks: 70 Date:23.07.2024 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	What are the advantages of slip ring over squirrel cage motors?	3	L3
2	Write torque equation of 3-phase induction motor?	1	L1
3	Write the function of Star-delta starter used in 3-ϕ IMotor.	2	L2
4	What are the finding parameters using the blocked rotor test on 3-ϕ induction motor?	2	L2
5	Write down the formula for distribution factor	3	L3
6	Define pole pitch, coil span factor?	3	L3
7	What is concentrated winding and distributed winding?	4	L4
8	Why synchronous motor is not self starting?	4	L4
9	What are effects of increase in excitation of synchronous motor?	5	L3
10	Give the applications of universal motor?	5	L5
	Part-B		
Answer All the following questions. (5X10M=50Marks)			
11	Describe the principle construction and operation of 3-phase Induction motor. (10M)	3	L3
	OR		
12	Derive the torque equation of 3-phase induction motor. Mention the condition for maximum torque. (10M)	4	L2
13	Explain the speed of a 3-phase induction motor controlled by its stator voltage control? (10M)	5	L5
	OR		
14	Explain in detail about any one starting methods of 3-phase induction motors. (10M)	5	L3
15	Derive the expression for induced emf per phase in a 3-phase alternator? mention how different winding factor affect the induced emf. (10M)	5	L3

	OR		
16	What is meant by synchronization? Explain the way of synchronizing an alternator to the infinite bus bars. (10M)	3	L3
17	Explain briefly the principle of operation of 3-phase synchronous motor and mention applications of synchronous motor. (10M)	4	L3
	OR		
18	What is synchronizing power and explain the necessity condition of parallel operation of alternator? (10M)	4	L3
19	Explain the construction and operation of shaded pole motor. (10M)	5	L4
	OR		
20	Explain the construction and operation of resistance split space induction motor. (10M)	5	L5