



R18 Regulation Subject code: 2P4BC
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	Define slip and slip speed.	1	L1
2	Write torque equation of 3-phase induction motor?	1	L1
3	What is rotor reactance in an induction machine? Explain.	2	L1
4	What is the procedure to conduct the blocked rotor test on 3- ϕ induction motor?	2	L1
5	Write the effect of armature reaction in an alternator?	3	L2
6	Why is EMF method called Pessimistic method?	3	L2
7	What is concentrated winding and distributed winding?	4	L2
8	How are 'V' and 'inverted V' curves of synchronous motor are defined?	4	L2
9	How the synchronous motor can be used as synchronous condenser?	5	L3
10	Write about double revolving field theory?	5	L3

Part-B

Answer All the following questions. (5X10M=50Marks)			
11	Explain the 3-phase induction motor operation under injection of an e.m.f. into the rotor circuit. [10M]	1	L3
OR			
12	a) Explain the difference between squirrel cage and wound rotor of 3 phase Induction motor. [5M] b) Explain the phenomenon of crawling and cogging. [5M]	1	L2
13	a) Explain the procedure for conducting No load test on three phase induction motor. [5M] b) Explain the speed control of induction motor using Rotor resistance control. [5M]	2	L2
OR			
14	a) Explain the procedure of conducting of blocked rotor test on three phase induction motor. [5M] b) Explain the working of Induction generator. [5M]	2	L2

15	Derive an expression for finding regulation of salient - pole alternator using two reaction theory. Draw its Phasor diagram. [10M]	3	L2
	OR		
16	What is meant by synchronization? Explain the way of synchronizing an alternator to the infinite bus bars. [10M]	3	L3
17	a) Explain the difference between salient and cylindrical type of rotor of an alternator. [5M] b) Explain the action of synchronous motor under loaded conditions. [5M]	4	L2
	OR		
18	a) Why synchronous motor is not self-starting? Explain various starting methods. [5M] b) What is hunting in a synchronous motor? Explain how it can be suppressed. [5M]	4	L2
19	Explain the operation of capacitance split phase induction motor. [10M]	5	L3
	OR		
20	Explain the operation of capacitance start capacitance run induction motor. [10M]	5	L3