



R17 Regulation
TKR COLLEGE OF ENGINEERING AND TECHNOLOGY
(Autonomous, Accredited by NAAC with 'A+' Grade)

Subject code: 1P3DC

B.Tech II Year I Semester Supplementary Examinations, February 2024

ELECTRICAL TECHNOLOGY
(ECE)

Maximum Marks: 70

Date: 21.02.2024 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.
 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)

- 1 Write the classification of dc generator?
- 2 What are the applications of different generator?
- 3 Draw the phasor diagram of single phase transformer with a no-load condition
- 4 A 20kva,2000/200 Volts single phase transformer. Determine K
- 5 Define the slip and synchronous speed.
- 6 6-pole,50hz,3-phase induction motor runs at 800rpm. Calucalte the slip
- 7 Define the K_p and K_D .
- 8 Calculate the number of slot/ pole and distribution factor for a 36-slots,4-pole machine.
- 9 Define the deflection torque and controlling torque
- 10 What are the advantages of PMMC?

Part-B

Answer All the following questions.

(5X10M=50Marks)

- 11 Explain the construction details of a dc machine. [10]
OR
- 12 A 6-pole dc generator having a 480 conductors and driven at a speed of 1200rpm.flux per pole is 0.012 Weber's. Determine E_g assume the to 1)lap winding 2) Wave Winding[10]
- 13 Explain the Open circuit test and Short circuit Test of single phase transformer. [10]
OR
- 14 A transformer takes a no load current of 4amp and observe 250 watts when Primary is connected to a 250 volts ,50Hz supply. Find Magnetization component and Iron component. [10]
- 15 Explain the Principle operation of induction motor. [10]
OR
- 16 Construction details of 3 Phase induction motor. [10]
OR
- 17 Derive the expression for EMF equation of Alternator. [10]
OR
- 18 Calculate the voltage induced per phase in a 3-phase ,50hzalternator having a flux per pole of

	0.1515wbars.the number of conductors in series is 360degries.assume the full pitch coil with a distribution factor 0.96. [10]
19	Explain the construction detail and Principle operation of PMMC. [10]
	OR
20	What are the different types of errors in PMMI INSTRUIMENT explain their errors. [10]