

**PRAGATI ENGINEERING COLLEGE: SURAMPALEM  
(AUTONOMOUS)**

**I B.Tech I Semester Supplementary Examinations, July – 2024**

**BASIC ELECTRICAL ENGINEERING  
(ECE)**

Time: 3 hours

Max. Marks: 70

**Answer ONE Question from each Unit  
All Questions Carry Equal Marks**

Q. No.	Questions	BTL	CO	Marks
<b>UNIT – I</b>				
1.	a) Explain operating principle of a Single phase transformer with a neat diagram.	K2	CO1	7M
	b) Derive the EMF equation of a single phase transformer	K3	CO1	7M
<b>OR</b>				
2.	a) Explain about various types of losses that occurs in a transformer	K2	CO1	7M
	b) Explain about the Procedure steps of OC & SC Test of a single phase transformer with Diagrams.	K2	CO1	7M
<b>UNIT – II</b>				
3.	a) Explain the Construction Details of induction motor	K2	CO2	7M
	b) Explain about various starting methods of an induction motor.	K2	CO2	7M
<b>OR</b>				
4.	a) Draw and explain about the torque slip characteristics of an induction motor	K3	CO2	7M
	b) Explain Advantages, Disadvantages and Applications of induction Motor	K2	CO2	7M
<b>UNIT – III</b>				
5.	a) Explain about the working principle of Capacitor start and run motor.	K2	CO3	7M
	b) Derive the EMF equation of a Synchronous Generator	K2	CO3	7M
<b>OR</b>				
6.	a) Explain the constructional details of synchronous Generator.	K2	CO3	7M
	b) Explain the procedure steps of voltage Regulation by synchronous impedance method.	K3	CO3	7M
<b>UNIT – IV</b>				
7.	a) Discuss about starting methods of synchronous motors	K2	CO4	7M
	b) Draw and explain the equivalent circuit and phasor diagram of a synchronous motor	K3	CO4	7M
<b>OR</b>				
8.	a) Explain the Operation of synchronous Motor with diagram	K2	CO4	7M
	b) Explain about Advantages and Applications of induction Motor	K2	CO4	7M
<b>UNIT – V</b>				
9.	a) Derive EMF equation of DC generator	K3	CO5	7M
	b) Explain principle of operation of DC motor with a neat sketch	K2	CO5	7M
<b>OR</b>				
10.	a) Explain the necessity, operation of 3-point starter in a DC machine	K2	CO5	7M
	b) Explain about speed control methods of DC motor	K2	CO5	7M