

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

I B.Tech II Semester Regular Examinations, June-2024

**BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
(Common to CE,EEE,ME,ECE, CSE(CS) and IT)**

Time: 3 hours

Max. Marks: 70

**PART- A
(BASIC ELECTRICAL ENGINEERING)**

Note:

- i. Question 1 shall contain 5 compulsory short answer questions such that each question carry 1 Mark.
- ii. In each of the questions from 2 to the last question, there shall be either/or type questions of 10 marks each.

Max. Marks: 35

Q. No.	Question	BTL	CO	Marks
1.	a) State ohm's law	K1	CO1	1M
	b) Define Form factor.	K1	CO1	1M
	c) Write the construction parts of DC Generator?	K1	CO2	1M
	d) What is the working principle of Wheatstone bridge?	K2	CO2	1M
	e) What are conventional and non-conventional sources of energy?	K1	CO3	1M
UNIT-I				
2.	a) State and explain the Superposition Theorem?	K1	CO1	5M
	b) Define and explain the following terms related to an alternating quantity: (i) Instantaneous value (ii) Peak value (iii) Cycle (iv) Angular frequency (v) Peak to Peak value	K2	CO1	5M
OR				
3.	a) Explain in detail the volt-ampere relationship of R, L and C elements with neat diagrams	K1	CO1	5M
	b) Determine the currents i_1 and i_2 in the circuit shown below	K3	CO1	5M
UNIT-II				
4.	a) Explain the Principle operation of DC Generator?	K2	CO2	4M
	b) Explain the construction and working of PMMI instrument.	K2	CO2	6M
OR				
5.	a) Explain the principle of operation of DC Motor?	K2	CO2	5M
	b) Explain the principle of operation of Three Phase Induction Motor?	K2	CO2	5M
UNIT-III				
6.	a) Explain the operation of Solar & Wind power generation.	K2	CO3	6M
	b) Explain the two-part electricity tariff?	2	CO3	4M
OR				
7.	a) Explain the Working principle of Fuse with its merits and demerits?	K2	CO3	6M
	b) How to calculation of electricity bill for domestic consumers?	K3	CO3	4M

PART-B
(BASIC ELECTRONICS ENGINEERING)

Note:

- i. Question 1 shall contain 5 compulsory short answer questions such that each question carry 1 Mark.
- ii. In each of the questions from 8 to the last question, there shall be either/or type questions of 10 marks each.

Max. Marks: 35

Q. No.	Question	BTL	CO	Marks
1.	f) What are the types based on junction of transistor?	K1	CO1	1M
	g) What is Small signal analysis?	K1	CO1	1M
	h) What is role of Voltage regulator in electronic Circuit?	K1	CO2	1M
	i) What is gray code of 1001101?	K2	CO3	1M
	j) What is the application of registers?	K1	CO3	1M
UNIT-I				
8.	a) Elaborate the evolution of electronics.	K2	CO1	5M
	b) Discuss about Zener Effect.	K2	CO1	5M
OR				
9.	With neat diagram explain about CE configuration and its characteristics.	K2	CO1	10M
UNIT-II				
10.	a) Explain with neat sketches about DC power supply.	K2	CO2	5M
	b) Discuss the working principal of full wave bridge rectifier.	K2	CO2	5M
OR				
11.	Draw the block diagram of RC coupled and explain.	K2	CO2	10M
UNIT-III				
12.	convert the following decimal numbers to the indicated base:			
	a) i) 7562.45 to Octal ii) 1938.257 to hexadecimal	K3	CO3	5M
	b) Discuss Half adder with truth table.	K2	CO3	5M
OR				
13.	a) State and prove De-morgan's Law.	K4	CO3	5M
	b) What is counter? Discuss in detail about.	K2	CO3	5M