Question Paper Code: R18A31EE02

R18

ANURAG Engineering College

(An Autonomous Institution)

III B.Tech I Semester Supplementary Examinations, December - 2024

ELECTRICAL MEASUREMENTS

(ELECTRICAL AND ELECTRONICS ENGINEERING)

Time: 3 Hours **Max. Marks: 75**

Section – A (Short Answer type questions) (25 Marks)

Answer All Questions	Course Outcome	B.T Level	Marks
1. Define static error.	CO1	L1	2M
2. For moving iron type instruments, give the expression for the deflecting torque.	CO1	L2	3M
3. State the advantages of instrument transformers	CO2	L2	2M
4. State the use of potential transformer	CO2	L1	3M
5. Mention errors in dynamometer wattmeters	CO3	L1	2M
6. Explain driving and braking torques.	CO3	L2	3M
7. Describe the basic principle of operation of a d.c. potentiometer.	CO4	L1	2M
8. List the applications/uses of potentiometers	CO4	L2	3M
9. Describe loss of charge method.	CO5	L1	2M
10. Explain measurement of loss angle.	CO5	L2	3M

Section B (Essay Questions)

Answer all questions, each question carries equal marks. **(5 X 10M = 50M)**

11. A)	i) Explain the construction and working of PMMC type instruments.	CO1	L2	5M
	ii) Describe the principle of attracted disc type E.S. voltmeters.		L3	5M
	OR			
B)	i) Discuss about errors and compensations of measuring instruments.	CO1	L2	5M
	ii) Explain the operation of electrometer type electrostatic voltmeters.		L3	5M
12. A)	Explain the construction of i) Current transformer ii) Potential transformer.	CO2	L2	10M
	OR			
B)	Explain the working of Three-phase electrodynamometer type power factor with a neat diagram	CO2	L3	10M
13. A)	Give the constructional details of electro dynamometer type wattmeter with a neat sketch.	CO3	L2	10M
	OR			
B)	What are the various types of errors in induction type energy meter? Explain the methods incorporated for their compensation	CO3	L2	10M
14. A)	i) With neat figure explain the working of an AC Potentiometer.	CO4	L3	5M
	ii) Discuss the significance of standardization.		L2	5M
	OR			
B)	i) Describe the principle of operation of LVDT	CO4	L2	5M
	ii) List the advantages and disadvantages of A.C potentiometers			5M

15. A)	i) Draw the circuit diagram of a Wheatstone bridge and derive the condition for balance.	CO5	L3	5M
	ii) Explain the features of De-Sauty'sBridge with a neat sketch		L2	5M
	OR			
B)	Explain how Wien's bridge can be used for experimental determination of frequency. Derive the expression for frequency in terms of bridge parameters.	CO5	L2	10M