Reg. No.												

Question Paper Code	12382

B.E. / B.Tech. - DEGREE EXAMINATIONS, NOV / DEC 2023

Third Semester

Electronics and Instrumentation Engineering

(Common to Instrumentation and Control Engineering)

20EIPC301 - ELECTRICAL AND ELECTRONIC MEASUREMENTS

(Regulations 2020)

Duration: 3 Hours Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level, CO
1.	Differentiate PMMC and MI instruments.	*2,K2,CO1*
2.	Recall the name of bridge used for frequency measurement.	*2,K1,CO1*
3.	Infer the term creeping in an induction type energy meter.	*2,K1,CO2*
4.	Show the advantages of smart energy meter.	*2,K1,CO2*
5.	Define the term standardization in potentiometer.	*2,K1,CO3*
6.	Indicate the function of instrument transformers.	*2,K1,CO3*
7.	State the need for auto ranging in a Digital Multimeter.	*2,K1,CO4*
8.	Give the relation between time period and frequency of an oscillating body.	*2,K1,CO4*
9.	List out the advantages of LED.	*2,K1,CO5*
10.	Illustrate the functions of a data logger.	*2,K2,CO5*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11	a)	Interpret the working principle of PMMC instrument with a neat diagram.	*13,K2,CO1*
		OR	
	b)	Explain the Maxwell's inductance bridge with necessary balance equations.	*13,K2,CO1*
12.	a)	Elaborate the torque developed in electrodynamometer type instrument in detail.	*13,K2,CO2*
		OR	
	b)	Describe the operating principle of smart energy meter with a neat sketch.	*13,K2,CO2*
13.	a)	Discuss the types of AC potentiometer and briefly explain any one of them.	*13,K2,CO3*

OR

b) Explain the operation of potential transformer with neat diagram. *13,K2,CO3*

14. a) Explain the working of successive approximation type DVM in detail. *13,K2,CO4*

OR

b) Explain the microprocessor based digital multimeter with neat sketch. *13,K2,CO4*

15. a) Illustrate the operation of cathode ray oscilloscope with necessary diagram. *13,K2,CO5*

OR

b) Analyze the mechanism used for digital data recording and explain its principle of working in brief. *13,K2,CO5*

PART - C (1 × 15 = 15 Marks)

16. a) Briefly explain the working of single phase induction type energy meter with neat sketch. *15,K2,CO2*

OR

b) Discuss the operation of different types of liquid crystal display and mention the advantages of LCD. *15,K2,CO5*