24 JAN 2023

Reg. No.												

Question Paper Code	11669

B.E./B.Tech. - DEGREE EXAMINATIONS, NOV/DEC 2022

Fourth Semester

Electrical and Electronics Engineering

20EEPC403 - MEASUREMENT AND INSTRUMENTATION

(Regulations 2020)

Duration: 3 Hours | Max. Marks: 100

PART - A (10 × 2 = 20 Marks)

Answer ALL Questions

		Marks, K-Level,CO
1.	Define the term "Sensitivity" of an instrument.	*2,K1,CO1*
2.	Compare moving coil with moving iron instruments.	*2,K2,CO1*
3.	Illustrate the types of analog ammeter used for instrumentation.	*2,K2,CO2*
4.	Point out any two applications of CT and of PT.	*2,K2,CO2*
5.	Evaluate why there are two conditions of balance in AC bridges.	*2,K2,CO3*
6.	Define ESI.	*2,K2,CO4*
7.	Differentiate the functions of printer and plotter.	*2,K2,CO5*
8.	Mention the use of Lissajous patterns.	*2,K2,CO5*
9.	What are the factors to be considered for selection of transducers?	*2,K1,CO6*
10.	Define piezo electric effect.	*2,K2,CO6*

PART - B (5 × 13 = 65 Marks)

Answer ALL Questions

11.	a)	Describe the static and dynamic characteristics of measuring instruments.	*13,K1,CO1*
		OR	
	b)	What are the different types of error? Explain how to eliminate errors in instrument.	*13,K2,CO1*
12.	a)	Describe the working of Single phase AC energy meter with circuit diagram and phasor diagram.	*13,K2,CO2*
		OR	
	b)	Write short notes on: a. Current transformer b. Weston frequency meter	*13,K2,CO2*

13. a) Draw a neat diagram of Kelvin's double bridge and explain how to measure low resistance. *13,K3,CO3*

OR

b) Explain how the inductance is measured in terms of known Capacitance using Maxwell's bridge. Compose the conditions for balance. *13,K3,CO3*

14. a) Relate and contrast the working, advantages and disadvantages of LED and LCD. *13,K2,CO5*

OR

b) Illustrate the working principle of data logger and sketch the layout. *13,K2,CO5*

15. a) Write in detail about the construction and working principle of LVDT. *13,K2,C(*

OR

b) Design the Block diagram arrangement of DAS and describe the function of each component and also state its applications *13,K2,CO6*

PART C (1 × 15 = 15 Marks)

16. a) Explain the different types of grounding techniques with neat diagram. *15,K2,CO4*

OR

b) (i) Summarize the effect of EMI&ESI. *8, K2,CO4*
(ii) Discuss the multiple loop and earth loop. *7, K2,CO4*