



This document is a part of Main Course File		Document No.: CFM – 8	
	SARDAR VALLABHBHAI PATEL EDUCATION SOCIETY MANAGED		
	N. G. PATEL POLYTECHNIC		
ELECTRICAL ENGINEERING DEPARTMENT			
ASSIGNMENTS			
Course Name (With Code): Electrical Instrumentations (4330902)			
Semester / Year: Third/Second			
Assignment Number: 1			
Assignment CO Number: 4330902.1			
Sr. No.	Questions related to Course Outcomes		
Part – A	Questions carrying 3 Marks		
1	Explain factors to be considered while selecting a measuring instrument.		
2	Compare gravity control and spring control.		
3	Explain eddy current damping with diagram.		
4	Explain air friction damping in instruments.		
5	State and explain role of instrument in measuring system.		
Part – B	Questions carrying 4 Marks		
1	Define:(i) Scale Sensitivity (ii) Accuracy (iii) Repeatability (iv) Threshold Sensitivity		
2	Explain working principle of potentiometer with diagram.		
3	State and explain the types of errors in measurement.		
4	State and explain role of instrument in measuring system.		
5	Give classification of instrument based on measuring quantity.		
Part – C	Questions carrying 7 Marks		
1	Enlist and explain methods to obtain damping torque.		
2	Classify the measuring instruments based on different parameters.		
3	Explain systematic errors.		
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Course Name (With Code): Electrical Instrumentations (4330902)		
Semester / Year: Third/Second		
Assignment Number: 2		
Assignment CO Number: 4330902.2		
Sr. No.	Questions related to Course Outcomes	
Part – A	Questions carrying 3 Marks	
1	Explain working principle of DC potentiometer.	
2	Explain Maxwell Bridge for measurement of inductance.	
3	Explain Desauty bridge for measurement capacitance.	
4	Describe working of megger.	
5	Explain measurement of high voltage using potentiometer.	
Part – B	Questions carrying 4 Marks	
1	Explain working of whetstone bridge to measure resistance with diagram. Write its limitations.	
2	Explain construction and working of earth tester with diagram.	
3	Write a short note on universal impedance bridge.	
4	Explain Maxwell bridge with diagram.	
5	Derive the formula to measure unknown capacitance using Dsauty bridge.	
Part – C	Questions carrying 7 Marks	
1	What is standardization of potentiometer? Explain standardization of Crompton potentiometer.	
2	Explain Kelvin double bridge with its equation.	
3	Explain AC potentiometer with its applications.	
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Course Name (With Code): Electrical Instrumentations (4330902)

Semester / Year: Third/Second

Assignment Number: 3


Assignment CO Number: 4330902.3

Sr. No.	Questions related to Course Outcomes
Part – A	Questions carrying 3 Marks
1	Explain working of moving iron repulsion type ammeter.
2	Explain construction and working of dynamometer type voltmeter.
3	Explain static type phase sequence indicator.
4	Explain construction and working of hot wire instrument.
5	How range of voltmeter can be extended using series multiplier?
Part – B	Questions carrying 4 Marks
1	Explain construction and working of MI attraction type ammeter.
2	Write short note on Mertz price type maximum demand indicator
3	Explain construction and working of clip on meter.
4	How range of ammeter can be extended using shunt?
5	Give comparison between current transformer and potential transformer.
Part – C	Questions carrying 7 Marks
1	Explain the construction and working of moving iron type frequency meter with diagram.
2	Explain the construction and working of single phase energymeter with diagram.
3	Write short note on instrument transformer.

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Course Name (With Code): Electrical Instrumentations (4330902)			
Semester / Year: Third/Second			
Assignment Number: 4			
Assignment CO Number: 4330902.4			
Sr. No.	Questions related to Course Outcomes		
Part – A	Questions carrying 3 Marks		
1	What is calibration? Explain the need of calibration.		
2	Explain calibration of voltmeter using Potentiometer.		
3	Explain long period test using substandard meter for calibration of energy meter.		
4	Explain calibration of wattmeter using Potentiometer.		
Part – B	Questions carrying 4 Marks		
1	Explain calibration of wattmeter using substandard meter.		
2	Explain short period test using substandard meter for calibration of energy meter.		
3	Write general test conditions as per IS for calibration of ammeter, voltmeter, wattmeter & energy meter.		
4	Explain calibration of wattmeter using Potentiometer.		
5	Explain calibration of voltmeter using substandard meter.		
Part – C	Questions carrying 7 Marks		
1	Explain the procedure for testing of single phase energy meter using substandard wattmeter and stopwatch.		
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ASSIGNMENTS

Course Name (With Code): Electrical Instrumentations (4330902)

Semester / Year: Third/Second

Assignment Number: 5

Assignment CO Number: 4330902.5

Sr. No.	Questions related to Course Outcomes
Part – A	Questions carrying 3 Marks
1	State types of transducers used for measurement of Displacement. Explain any two.
2	Explain piezoelectric transducer.
3	Explain radiation pyrometer.
4	Explain synchro with diagram.
5	Write short note on opto coupler.
Part – B	Questions carrying 4 Marks
1	State the factors to be considered while selecting transducers.
2	Explain working of piezo electric transducers.
3	Explain reasons for failure of transducers and its effect on environment.
4	Write a short note on strain gauge.
5	Explain construction and working of photo voltaic cell.
Part – C	Questions carrying 7 Marks
1	Explain construction and working of LVDT with diagram. State its advantages, disadvantages and its applications.
2	Explain construction and working of photo diode. Write advantages, disadvantages and applications of photo diode.
3	Enlist and explain various transducers used for the measurement of displacement.
4	Enlist and explain various transducers used for the measurement of speed.
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