

**END SEMESTER EXAMINATION(ESE), JAN – 2023**

Course Name: **Instrumentation and Control System**, Course Code: **201ETL205**

**Day and Date: Wednesday, 25.01.2023**

**Time: 2.00 pm to 4.00 pm**

Seat No:

**Max. Marks- 50**

**Instructions:**

- Question No. 1 & 2 is compulsory.
- Figure to the right indicate full marks.
- Give suitable general Instructions
- Any other Course Specific Instructions.
- No questions should repeat from MSE/ISE

BT	CO's	Q. No.		Marks
		<b>Q.1</b>	<b>All Questions are compulsory</b>	<b>20</b>
	<b>CO2</b>	<b>a</b>	Classify transducers/sensors, Explain LVDT	<b>6M</b>
<b>1,2</b>	<b>CO1</b>	<b>b</b>	Discuss role of software in virtual instrumentation	<b>7 M</b>
<b>1,2</b>	<b>CO1</b>	<b>c</b>	Compare Spectrum analyzer and Wave analyzer	<b>7 M</b>
		<b>Q.2</b>	<b>All Questions are compulsory</b> (internal sub question permitted for optional questions either a or b)	<b>10</b>
<b>1,2</b>	<b>CO2</b>	<b>a</b>	Explain Differential equation representation of physical systems with example.	<b>4</b>
<b>1,2</b>	<b>CO1</b>	<b>b</b>	Draw signal flow graph for below block diagram and explain <div style="text-align: center;"> <p>masons gain formula.</p> </div>	<b>6</b>
		<b>Q.3</b>	<b>All Questions are compulsory</b> (internal sub question permitted for optional questions either a or b)	<b>10</b>
<b>1,2</b>	<b>CO1</b>	<b>a</b>	Which are Standard test signals? draw and explain	<b>3</b>
<b>1,2</b>	<b>CO1</b>	<b>b</b>	Explain Gain Margin and Phase Margin with example.	<b>7</b>
		<b>Q.4</b>	<b>Attempt any two out of three questions</b>	<b>10</b>
<b>1,2</b>	<b>CO1</b>	<b>a</b>	Write a note on Concept of Stability in s domain	<b>5</b>
<b>1,2</b>	<b>CO1</b>	<b>b</b>	Write a note on concept of relative stability using Routh array	<b>5</b>
<b>1,2</b>	<b>CO1</b>	<b>C</b>	Write a note on Classification of Stability	<b>5</b>