

Time: 3 Hrs

Marks: 80

Que 1. Attempt ant four

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| a. Draw Hay's bridge. List applications of it. | 5 |
| b. List static and dynamic characteristics of instruments | 5 |
| c. Explain Generalized data acquisition system in brief | 5 |
| d. Draw front panel of CRO | 5 |
| e. List different types of transducers with their applications | 5 |

Que 2. Attempt the following

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| a. Draw and Explain Ultrasonic transducer for level measurement | 10 |
| b. Draw and Explain LVDT .Write advantages, disadvantages and applications of it. | 10 |

Que 3. Attempt the following

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| a. List flow meters. Draw and Explain magnetic flow meter. What are its limitations? | 10 |
| b. Compare RTD ,thermocouple and thermistor with construction ,working and applications | 10 |

Que 4. Attempt the following

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| a. Draw and Explain Kelvin double bridge for resistance measurement. Write advantages of it. | 10 |
| b. Draw and Explain Schering bridge for capacitance measurement | 10 |

Que 5. Attempt the following

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| a. Draw and Explain the measurement of phase and frequency with Lissajous figures. | 10 |
| b. Draw and Explain block diagram of CRO. Explain need of delay lines. | 10 |

Que 6. Attempt the following

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| a. Data logger | 6 |
| b. Strain gauge transducer | 8 |
| c. FET type voltmeter | 6 |

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