

2021

ELECTRONICS MEASUREMENT & INSTRUMENTATION

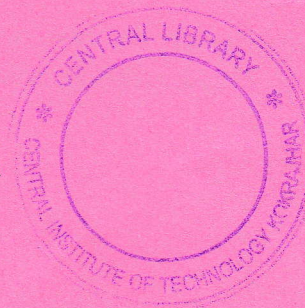
Full Marks: 100

Time: Three hours

The figures in the margin indicate full marks for the questions.

Answer any five questions.

1. a) Define Measurement. Also explain two different methods of measurement. 2+3=5
- b) What is known as an Accuracy of the measurement? Explain in details. 7
- c) Point out the main differences between accuracy, precision and resolution in measurement. 8
2. a) Explain different types of errors in measurement. 5
- b) Define Potentiometer. Also explain how does a potentiometer works with proper figure. 2+6=8
- c) Describe three main applications of a potentiometer. Also explain why standardization is required in working of a potentiometer. 3+4=7
3. a) Explain in details the working principle of DC Slide wire potentiometer. 10
- b) Explain in details the working principle of DC Crompton potentiometer. 10



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| 4. | a) | Point out the main differences between DC potentiometer and AC potentiometer. | 4 |
| | b) | Explain in details the working principle of Permanent magnet moving coil meter by providing proper figure. | 10 |
| | c) | Point out the main merits and demerits of PMMC meter. | 6 |
| 5. | a) | Explain the working principle of Electro dynamo type instrument in details. | 10 |
| | b) | Point out the main differences between Moving iron type and Electro dynamo type instrument. | 5 |
| | c) | Point out the advantages and disadvantages of Electro dynamo type instrument. | 5 |
| 6. | a) | Define Digital multimeter. Explain its features and various parts by providing proper block diagram. | 2+7=9 |
| | b) | Explain the working principle of Vector Impedance meter along with its proper figure. | 7 |
| | c) | Point out the main differences between Q-meter and Vector Impedance meter. | 4 |
| 7. | a) | Define Cathode ray oscilloscopes. At the construction point of view explain the main parts of the CRO. | 2+4=6 |
| | b) | Explain the two different methods of focusing the electron beam in the CRO in details by providing proper figure. | 7 |
| | c) | Explain the basic circuit diagram of the cathode ray Oscilloscopes in details. | 7 |

