Total number of printed pages:2 **D/3rd/DECE304**

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

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