(19

Electrical/III CBSGS

Elect & Elex Measurement

QP Code : **NP-18711**

(3 Hours) **[Total Marks : 80**

N. B. : (1) Question No. **1** is **compulsory**.
(2) Solve any **three** out of remaining five questions.
(3) **Figures** to the **right** indicate **full** marks.
(4) **Assume** data, if **necessary**.

1. Solve any **four** :- 20
   (a) Explain measurement of medium resistance using wheatstone bridge.
   (b) Explain different types of delector used in ac bridge.
   (c) Write advantages and disadvantages of Hay's bridge.
   (d) Explain resolution and sensitivity of digital meter.
   (e) Differentiate indicating and intigrating instruments.
   (f) What is the basic requirement of transducer.

2. (a) What are different types of error that occur duing measurement, explain each. 10
   (b) Explain with the help of diagram operation of ramp type digital voltmeter also write its advantage and disadvantage. 10

3. (a) Explain construction, working principle and operation of LVDT. 10
   (b) Explain with phasor diagram how schoring bridge can be used to measure unknown capacitor. 10

4. (a) Describe with suitable diagram how a D.C. potentiometer can be used for :- 10
      (i) Calibration of a voltmeter
      (ii) Calibration of an ammeter
      (iii) Calibration of wattmeter
   (b) Describe with the diagram operation of a piezoelectric transducer ? List the advantages and disadvantage of piezoelectric transducer. 10

5. (a) Prove that in a ballistic galvonometer, the charge is propotional to first swing of the moving coil 10
   (b) Explain working of digital frequency meter and show it is useful for time interval measurement. 10

6. Write short notes on :- 20
   (a) Explain the construction and working of digital technometer.
   (b) Explain the construction and working of Resistance Temperature Detector (RTD).
