

Duration – 3 Hours

Total Marks assigned to the paper- 80

- N.B.:-** (1) Question No.1 is compulsory.
 (2) **Attempt** any **three** questions out of remaining **five** questions.
 (3) Assume suitable data if necessary and justify the same.

- Q 1.** Answer the following questions. **20**
- Write the difference between attraction and repulsion type moving iron instrument.
 - Write about piezoelectric transducer.
 - Explain a De Sauty's bridge to measure the capacitance of capacitor.
 - Define various types of errors in measuring instrument.
- Q 2 a)** Discuss the construction and working of moving coil instrument and derive the equation of torque. **10**
- Q 2 b)** Explain the construction and working of single phase electro-dynamometer type power factor meter. **10**
- Q 3 a)** Explain how D.C. potentiometer is used to calibrate the ammeter, voltmeter and wattmeter. **10**
- Q 3 b)** Explain the construction and working principle of thermistor. **10**
- Q 4 a)** Draw and explain working of successive approximation type digital voltmeter. **10**
- Q 4 b)** Explain the different types of torques required for operation of any indicating instruments. **10**
- Q 5 a)** Explain how Hay's bridge can be used to measure value of unknown inductor. **10**
- Q 5 b)** Explain the construction and working of Schering's bridge **10**
- Q 6 a)** Explain the construction and working of Thermocouple. **10**
- Q 6 b)** Write short note on Ballistic galvanometer. **10**