

Duration – 3 Hours

Total Marks: 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**  
 a) Explain voltage multiplier.  
 b) Explain measurement of speed by photovoltaic tachometer.  
 c) Write the difference between attraction and repulsion type moving iron instrument.  
 d) Write about piezoelectric transducer.
- Q 2 a) Explain the construction and working of Weston type synchroscope. **10**  
 Q 2 b) Draw and explain working of successive approximation type digital voltmeter. **10**
- Q 3 a) Explain the construction and working of Thermocouple. **10**  
 Q 3 b) Explain the construction and working of single phase electrodynamic type power factor meter. **10**
- Q 4 a) Explain the different types of torques required for operation of any indicating instruments. **10**  
 Q 4 b) Discuss the construction and working of moving coil instrument and derive the equation of torque. **10**
- Q 5 a) Explain how D.C. potentiometer is used to calibrate the ammeter, voltmeter and wattmeter. **10**  
 Q 5 b) Explain the construction and working of Schering's bridge **10**
- Q 6 a) Explain the construction and working principle of thermistor. **10**  
 Q 6 b) Explain how Hay's bridge can be used to measure value of unknown inductor. **10**

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