SE-Sem-III-CBSGS-Electrical-EEM 13/12/15

Q.P. Code: 25119

Time: 3 Hours **Marks: 80**

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

1. Solve any **five** :- 20
   a) Explain measurement of medium resistance.
   b) Explain classification of analog instruments.
   c) Explain resolution and sensitivity of digital meter.
   d) Compare slide wire potentiometer and Crompton's potentiometer.
   e) Explain classification of Transducers in brief.
   f) Short note on - basic Q meter.

2. a) Explain working principle, construction of PMMC type meter and derive the torque equation. 10
   b) Explain the Construction and Working of Maxwell's Bridge. Also Derive the equation for unknown inductance. Draw the phasor diagram. 10

3. a) A PMMC instrument with full scale deflection of 100 μA and coil resistance of 50Ω is to be converted into a multimeter to measure voltage (0-500V) and current (0-10A). Find the suitable values of shunt and multiplier resistance required. 10
   b) Explain the construction and working of LVDT. 10

4. a) Explain with neat sketch Piezo-electric transducers and derive the expression for magnitude of voltage across the load by making simplifying assumptions. List the advantages and disadvantages. 10
   b) Explain in detail different types of error that occur during measurement. Write expression for relative limiting error. 10

5. a) Explain construction and working of Electrodynamometer type power factor meter. Also derive the torque equation. 10
   b) Explain with block diagram: Ramp type digital voltmeter. Also write its advantages and disadvantages. 10

6. Write a short note on-
   a) Digital frequency meter 07
   b) Megger 07
   c) Calibration of wattmeter 06