QP Code : 30693

time: 3 hrs   Total Marks: 80

NB (a) Q .NO. 1 IS COMPULSORY

(b) Attempt any three out of remaining question

(c) Figure to the right indicate full marks

(d) Assume suitable data if necessary

Q.No. 1(a) Differentiate between indicating and integrating instrument.   (4)

(b) Explain resolution and sensitivity of digital meter   (4)

(c) Explain piezo electrical transducer.   (4)

(d) Explain a suitable bridge to measure medium resistance   (4)

(e) Differentiate between Active and Passive transducers.   (4)

Q. No. 2 (a) Explain working principle, construction of D.C. permanent

Magnet moving coil type meter and hence derive the torque Equation.   (10)

Q. NO. 2(b) Describe construction, working principle, and theory of dynamometer

Type of wattmeter.   (10)

Q NO.3 (a) Explain with block diagram Ramp type digital voltmeter.   (10)

Q.NO. 3(b) Explain Kelvin's double bridge to measure low resistance and hence derive the

Equation for unknown resistance using the above bridge.   (10)

Q.NO .4(a) Explain Maxwell's Inductance bridge to measure self inductance and hence derive the
equation for self inductance using the above bridge draw the phasor diagram   (10)

Q.NO. 4(b) Explain the construction and working of D.C Crompton type of potentiometer.   (10)

Q .NO.5 (a) A moving coil instruments gives a full scale deflection of 10mA when the potential   (10)
difference across its terminals is 100 mV . Calculate

i.   The shunt resistance for a full scale deflection corresponding to 100 A,
ii.   The series resistance for full scale reading with 1000 V.
Calculate the power dissipation in each case.

(b) Explain the construction and working of LVDT.   (10)

Q.6. Write shot note on any three   (20)

a) Moving Iron Instrument   c) Megger

b) Tachometer   d) Reed moving coil type frequncymeter