Q. P. Code: 37877

Duration – 3 Hours **Total Marks - 80**

N.B.:- (1) Question No.**1** is compulsory.
(2) **Attempt** any **three** questions out of remaining Question No. 2 to Question No. 6.
(3) Assume suitable data if necessary and justify the same.

Q 1 a)	Define types of possible errors in an instrument. How these errors can be minimized?	**5**
b)	Explain resolution and sensitivity of digital meter.	**5**
c)	Explain piezo electric transducer.	**5**
d)	Explain a De Sauty's bridge to measure the capacitance of capacitor.	**5**
Q 2 a)	Explain working principle, construction of moving iron instrument and hence derive the torque equation.	**10**
Q 2 b)	Describe construction, working principle and theory of dynamometer type wattmeter.	**10**
Q 3 a)	Explain with block diagram Ramp type digital voltmeter.	**10**
Q 3 b)	Explain Kelvins double bridge to measure low resistance and hence derive the equation for unknown resistance.	**10**
Q 4 a)	Explain Hay's bridge to measure inductance and hence derive the equation for inductance using above bridge, draw phasor diagram.	**10**
Q 4 b)	Explain the calibration of voltmeter and ammeter using potentiometer.	**10**
Q 5 a)	Explain Thermistor .Write down advantages and disadvantages of Thermistor.	**10**
Q 5 b)	Explain the construction and working of LVDT with advantages and disadvantages.	**10**
Q 6 a)	Write a short note on PMMC instrument	**10**
Q 6 b)	Explain the construction and working of Digital frequency meter.	**10**

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