Set No. 1

III B.Tech I Semester Supplementary Examinations, October/November - 2019 ELECTRICAL MEASUREMENTS

(Electrical and Electronics Engineering)

Time: 3 hours

Max. Marks: 75

Answer any FIVE Questions All Questions carry equal marks

1	a) b)	Explain different types of damping torques in measurements. Explain the construction and working of MI instruments with neat diagram.	[8M] [7M]
2	a) b)	Discuss on Current Transformer and Potential Transformer design considerations. Explain principle of operation of a single phase Electrodynamometer type of Instrument and derive the expression for Torque equation for the same.	[7M] [8M]
3	a)	With a neat construction diagram, explain the operation of single phase induction type	[8M]
	b)	Explain testing of single phase energy meter by phantom loading using R.S.S. meter.	[7M]
4	a)	Explain the construction and working principle of Crompton's D.C potentiometer with post sketch	[7M]
	b)	Explain Measurement of unknown resistance and current by. A.C. Potentiometers and how standardization is done for these potentiometers.	[8M]
5	a)	Explain how an unknown resistance can be measured by carry foster's bridge?	[7M]
	b)	Explain the Loss of charge method for the measurement of high resistance.	[8M]
6	a)	Briefly discuss on measurement of inductance on Maxwell's bridge and Hay's bridge	[7M]
	b)	With the help of circuit diagram, explain how capacitance is determined with DeSauty's bridge.	[8M]
7	a)	What are the methods for determination of B-H curve of a magnetic material? Explain any one method	[8M]
	b)	A ballistic galvanometer of resistance 1500Ω gives a throw of 75 divisions when the flux through the search coil to which it is connected, is reversed. If the flux density is 0.1 Wb/m^2 , the search coil has 1400 turns, a mean area of 5500 mm ² and a resistance of 200 Ω ; calculate the galvanometer constant in terms of coulomb per scale division.	[7M]
8	a)	Explain integrating type of measurement of voltage by digital volt meters.	[7M]

b) Explain working principle of Digital frequency meter and Digital multimeter. [8M]
