Roll No. _____

END SEMESTER EXAMINATION
SEMESTER- III

COURSE CODE :EE403/EEE402
COURSE TITLE: ELECTRICAL MEASUREMENT & MEASURING INSTRUMENT.
SESSION :JULY-DEC2021

DURATION : 3 (THREE)HRS
MAXIMUM MARKS : 75
PASS MARKS : 35 %

NOTE: *1.Attempt any 5 (five) question*
2. Mark for each question is shown against it.
3. Assume suitable logical data whenever necessary

1.			
	(a)	How will you use a PMMC instrument which gives a full scale deflection at 50mV.Potential differences and 10mA current (i) Ammeter current 0-10 A range (ii) Voltmeter 0-250 range?	(8)
	(b)	What is zero drift? Explain the construction and working of electrodynamometer wattmeter.	(7)
2.	**(a)**	The meter element of a permanent-magnet moving coil instrument has resistances of 5Ω and requires 15mA for full-scale deflection. Calculate the resistances to be connected (i) in parallel to enable the instrument to read up to 1A (ii) in series to enable up to 15V.	(8)
	(b)	With the help of neat sketch, explain the Anderson bridge and draw the phasor diagram.	(7)
3.	(a)	A 1mA, 50Ω galvanometer is required to measure 5A (full-scale) .Find out the value of resistances to be added, across (shunt) the galvanometer to accomplish this measurement.	(5)
	(b)	With neat sketch explain the working principle of permanent magnet moving coil.	(5)
	(c)	With neat sketch explain a Kelvin's double bridge.	(5)
4.	**(a)**	With block diagram explain the construction and working of function generator.	(6)
	(b)	With the help of a sketch explain the Maxwell inductances bridge.	(7)
	(c))	Define (i) accuracy (ii) calibration.	(2)
5.	**(a)**	A measure value of capacitor is 205.3 µf where as its true value 201.4µf determine (i) absolute error (ii) correction factor (iii) ranges of values (iv) relatives error.	(7)
	(b)	What is potentiometer? Explain its working with neat sketch.	(5)
	(c)	Define (i) damping torque (ii) controlling torque (iii) deflecting torque	(3)
6.	**(a)**	A 100µA ammeter has an internal resistance of 100Ω for extending its range to measure 500µA the required shunt resistances is.	**(5)**
	(b)	With neat sketch explain the Schering bridge.	**(7)**
	(c)	Write three application of potentiometer.	**(3)**
7.	**(a)**	What should be the resistances of the moving coil of an ammeter which requires 2.5	**(5)**

		mA for full-scale deflection so that it may be used with a shunt having resistances of 0.0025Ω for a range of 0-10A?	
	(b)	What is current transformer and potential transformer?	**(5)**
	(c)	What is error? Explain the types of error in measurement.	**(5)**
8.	**(a)**	With neat sketch explain the working, merit and demerit of maximum demand indicator.	**(6)**
	(b)	Explain the three phase power measurement using two wattmeter methods for inductive load.	(9)

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