BE Semester-III (Electrical) Question Bank

Electrical and Electronics Measurement- 1

All questions carry equal marks (10 marks)

Q.1	Give classification of measuring instruments on the basis of operating principle.
Q.2	Explain difference between accuracy and precision.
Q.3	Discuss the classification of analog instrument.
Q.4	Derive Torque equation of D'Arsonaval Galvanometer.
Q.5	Explain the working principle of A.C. potentiometer. State the application of AC potentiometer.
Q.6	Describe construction and working of PMMC instrument.
Q.7	State and explain errors in induction watt hour meter.
Q.8	Describe construction and working of a Maximum Demand indicator.
Q.9	Describe use multiplier in case of voltmeter. State disadvantages of multiplier.
Q.10	Explain the measurement of three phase power using two watt meter method with necessary diagrams
Q.11	Explain working principle and use of analog tachometer.
Q.12	Describe with a circuit diagram operation of an electronic voltmeter used in differential amplifier.
Q.13	Explain with a neat diagram working of a Synchroscope.
Q.14	Calculate the total power and reading of the two wattmeter's connected to measure power in 3-phase balance load, if the reactive power is 15 KVAr and load power factor is 0.8 lagging.
Q.15	Explain working of hot-wire instruments. Also state advantages and disadvantages of hot-wire instruments.
Q.16	Describe construction and working of Trivector meter
Q.17	Explain working of Drysdale-Tinsley polar type a.c. potentiometer.
Q.18	Write a short note on single phase electrodynamometer type power factor meter.
Q.19	Discuss fully true RMS reading voltmeter
Q.20	What are the considerations required to be taken into account while selecting an electronic voltmeter.
Q.21	Explain Merz price maximum demand indicator.
Q.22	What are the advantages of electronic voltmeter over the other voltmeter?
Q.23	Explain the constructional detail and working of ferro dynamic Wattmeter. explain the advantage.
Q.24	Explain construction and working principle of operation of induction type wattmeter

Q.25	Explain Lorenz method for absolute measurement of resistance.
Q.26	What is standard? Explain secondary resistance standard Define (i) Accuracy (ii) Precession (iii) Drift (iv) Resolution.
Q.27	Differentiate between Spring control and Gravity control methods used to produce the controlling torque.
Q.28	Explain various methods of providing damping torque in an indicating instruments
Q.29	Explain how two wattmeters are used to measure power of a 3-phase balanced load
Q.30	Explain different motions in D'Arsonval galvanometer.
Q.31	Derive the dimension of the following quantities using fundamental units of L M T I system : (i) E.M.F. (ii) Magnetic flux density (iii) Permittivity.
Q.32	Describe primary standard of capacitance having concentric cylindrical structure.
Q.33	The Ayrton universal shunt has a total resistance of 8 KΩ and galvanometer has a resistance of 4 KΩ. Determine the multiplying power of shunt for 2 KΩ, 3 KΩ and 6 KΩ tapping.
Q.34	Describe in short the operating forces acting on indicating instrument for its proper functioning.
Q.35	Describe the construction and working of Weston type frequency meter.
Q.36	Sketch and explain the construction and working of attracted disc type Kelvin absolute electrometer.
Q.37	Explain with neat circuit diagram, the calibration of wattmeter using d. c. potentiometer.
Q.38	Sketch and explain the block schematic of digital tachometer.
Q.39	What are the causes of error in induction type energy meter? How these errors can be compensated?
Q.40	Two wattmeters are connected to measure the input to a balanced 3 phase circuit indicate 2000W and 500 W respectively. Find the power factor of the circuit(1) when both the readings are positive (2) when the latter reading is obtained after reversing the connection to the current coil of first instrument