Important Guess Question

Electrical and Electronic Measurements

Unit :- 1.

1. What is measurement ? Explain the significance of measurement.
2. Define 'Accuracy', 'Precision', 'Sensitivity and Resolution.
3. Define Error? Classify the different type of errors in measuring instruments. What are their cause and remedies?
4. Explain the difference between :-
   a) Absolute and Secondary instruments
   b) Indicating, Recording and integrating instrument
5. Define Calibration? What are the need of calibration.

Unit :- 2

1. Explain the construction and working of PMMC instruments. ~~Describe~~ why it is used only in DC.
2. Explain how would you extend the range of DC ammeter and voltmeter. Derive the expression required.
3. Explain the concept of loading effect and sensitivity.
4. What is instrument transformer ? Explain the CT and PT.
5. Explain the different types of Errors in CT, draw its phasor diagram (vector diagram) and derieve the expression.
6. Why an Ammeter be of very low resistance and a voltmeter should be of very high resistance.

Unit :- 3.

1. Show that the average power in a single phase AC circuit is given by $P = VI\cos\phi$
2. With neat diagram, explain the construction and working of dynamometer type wattmeter.
3. Explain two wattmeter method of 3-ϕ power measurement.
4. Discuss the effect of power factor variation on wattmeter readings in two wattmeter method.

Unit :- 4

1. With neat sketch, explain the construction and working of single phase electronic energy meter
2. Explain how would you calibrate an energy meter using direct loading.

Unit :- 5

1. Explain the classification of resistance from the point of view of measurement.
2. Explain the Kelvin's Double bridge method for measurement of low resistance.
3. How can we measure Medium resistance using voltmeter and ammeter method.
4. Explain or Write short notes on —
   (a) Megger
   (b) ohm meter.
5. How can we measure low inductance using Anderson bridge. Explain.

Unit : 6.

1. Describe the phase sequence indicator (Rotating type)
2. Write shorts notes on –
   - (a) ~~Q meter~~ LCR meter
   - (b) Earth tester
   - (c) Synchroscope
   - (d) clamp - on - Ammeter
3. Describe the construction and working principle of a single phase electrodynamometer type power factor meter. Prove that the special displacement of the moving system is equal to the phase angle of the system (i.e $\theta \propto \phi$)
4. Draw the block diagram of CRO and explain its different constituents.
5. ~~Draw the block~~ Explain the working of CRT with neat sketch.
6. How can we measure phase and frequency using Lissajous pattern.