**QUESTION BANK (I Scheme)**

**Name of subject: Electrical and Electronic Measurement**

**Course Title: EEM (22325)**  **Unit Test: I**

**Semester: 3I Program Code: EE**

**CHAPTER 1: Fundamentals of measurement (10 marks) (CO1)**

**2 marks**

1. State the necessity of measurement necessity?
2. State the meaning of the following:
3. Sensitivity (ii) Deflecting torque
4. State the types of errors (Any four).
5. List differences between absolute and secondary instrument
6. Define the term ‘calibration’ and state its need for measuring instruments.
7. Sate the advantaged of PMMC instrument.

**4 marks**

1. State the desirable qualities of measuring instrument and explain any two in brief.
2. State the differences between analog instruments and digital instruments.
3. State the types of errors in measuring instruments and reasons of occurrence of errors.
4. Define the following terms.

(i) Precision (ii) Drift (iii) Resolution (iv) Back lash

1. Explain instrumental errors and observational error in measuring instruments.

**CHAPTER2: Measurement of voltage and current (12marks) (CO2)**

1. **Marks**
2. Sate the advantaged of PMMC instrument.
3. State the meaning of i) Deflecting Torque ii) Damping Torque.
4. State the meaning of the following: (i) Sensitivity (ii) Deflecting torque
5. What is the difference between conventional ammeter and clip-on ammeter?
6. Calculate the resistance of shunt required to make a milliammeter which gives maximum deflection for a current of 15 mA and which has a resistance of 5 W, read up to 10 Amp.
7. Compare repulsion type MI instrument with attraction type MI instrument?
8. **marks**

1. Explain the construction and working of PMMC meter with neat sketch.

1. Explain the construction and working of MI meter with neat sketch.
2. State the necessity of extension of Ammeter using shunt with mathematical derivation if necessary.
3. A moving coil instrument gives full scale deflection of 24 mA. When a P.D. across if is 108 mV. Find the value of –

(i) Series resistance for full scale deflection of 400 V.

1. (ii) Find the power consumption.
2. Describe with circuit diagram, the working of full wave rectifier type A.C Voltmeter.
3. Explain with sketch, the construction and working principle of repulsion type moving iron instrument?

**CHAPTER 3: Measurement of Electric power (11 marks) (CO3)**

1. **Marks**
2. List out comparisons between CT’s and PT’s (Any four).
3. State the difference between unity P.F wattmeter and low P.F wattmeter.
4. A single phase wattmeter rated for 500 V; 5 A is having full scale deflection of 1000 watt. What is multiplying factor of the wattmeter?
5. Explain multiplying factor given on wattmeter.
6. Explain the need of phase sequence indicator.
7. Comparison between different wattmeter methods ( 1 wattmeter, 2 wattmeter and 3 wattmeter) for 3-phaseActive Power measurement
8. **marks**
9. With the neat sketch explain working of Dynamometer type wattmeter.
10. State errors occurring in wattmeter and suggest method for overcoming such types of errors (Any six).
11. State the merits and demerits of power measurement using 2-wattmeter method.
12. Explain the working of maximum demand indicator with a neat sketch.
13. Explain the working principle of phase sequence indicator with relevant

Constructional diagram

1. Describe with neat diagram 4-Quadrant meter.