

**ANURAG Engineering College**

(An Autonomous Institution)

III B.Tech I Semester Regular/Supple Examinations, Dec-2023/Jan-2024

**ELECTRICAL MEASUREMENTS****(ELECTRICAL AND ELECTRONICS ENGINEERING)****Time: 3 Hours****Max. Marks: 75****Section – A (Short Answer type questions)****(25 Marks)****Answer All Questions**

	<b>Course Outcome</b>	<b>B.T Level</b>	<b>Marks</b>
1. What is the principle of operation of PMMC type instrument?	CO1	L1	2M
2. What is the principle of electrostatic voltmeter?	CO1	L2	3M
3. Define ratio error.	CO2	L1	2M
4. What is the power factor meter?	CO2	L2	3M
5. Name the errors caused in Dynamometer type wattmeter.	CO3	L2	2M
6. Explain briefly the various errors in dynamometer wattmeter.	CO3	L2	3M
7. Explain the function of a shunted flux meter.	CO4	L2	2M
8. List the applications of LVDT.	CO4	L2	3M
9. Name the methods used for medium resistance measurement.	CO5	L1	2M
10. What are the advantages and disadvantages of a Maxwell bridge?	CO5	L2	3M

**Section B (Essay Questions)****Answer all questions, each question carries equal marks.****(5 x 10M = 50M)**

11. A) Explain the construction details of Repulsion – attraction type moving iron instrument. Derive the Torque equation for moving iron instrument.	CO1	L3	10M
<b>OR</b>			
B) What do you think are the permissible Errors in Ammeters and Voltmeters?	CO1	L3	10M
12. A) Explain the construction and working of a current transformer with a neat equivalent circuit.	CO2	L3	10M
<b>OR</b>			
B) Explain the principle of operation of the moving iron power factor meter with a neat connection diagram.	CO2	L3	10M
13. A) Explain driving system, moving system, and braking system in a single-phase induction type energy meter	CO3	L2	10M
<b>OR</b>			
B) i) Derive the torque equation for electro dynamo meter type wattmeter.	CO3	L3	5M
ii) Discuss the errors of single-phase energy meter.		L2	5M
14. A) i) What are the problems associated with ac potentiometer? Describe the working of any one ac potentiometer with a neat sketch.	CO4	L2	5M
ii) Explain the construction and working principle of Flux meter with a neat diagram.			5M

**OR**

- B) With the help of a neat circuit diagram explain Crompton's potentiometer and its working. How a true zero is obtained in a Crompton's pot
- CO4      L3      10M
15. A) Explain how insulation resistance of a cable can be measured with a help of Loss of charge method?
- CO5      L2      10M
- OR**
- B) Explain the construction and working of Anderson Bridge with suitable diagrams.
- CO5      L3      10M