

210
31/12/15 FN

Reg. No. :

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Question Paper Code : 21525

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2015.

Third Semester

Electronics and Instrumentation Engineering

EI 2202/EI 34/EI 1201/080300004/10133 EI 306 — ELECTRICAL
MEASUREMENTS

(Common to Instrumentation and Control Engineering)

(Regulations 2008/2010)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. How to extend the range of ammeter in PMMC instruments?
2. What is rectifier type of instruments?
3. What are the errors in electro-dynamometer wattmeter?
4. What is creep in energy meter?
5. How to calibrate D.C voltmeter using Potentiometer?
6. Define transformation ratio of CT and PT.
7. How to measure resistance by ammeter and voltmeter method?
8. Discuss briefly the measurement of resistance by direct deflection method.
9. Draw circuit for Schering bridge.
10. Define Q factor of coil.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the construction and operation of D' Arsonval galvanometer. (10)
- (ii) Obtain expression for deflection of D' Arsonval galvanometer. (6)

Or

- (b) (i) Explain construction and operation of moving iron type of instruments. (10)
- (ii) Describe various types of errors and its compensations in moving iron type of instruments. (6)
12. (a) Describe construction and operation of electro-dynamometer wattmeter to measure single phase A.C power. (16)
- Or
- (b) With neat sketch and phasor diagram explain construction and operation of Induction type single phase energy meter. (16)
13. (a) Describe with basic circuit construction and operation of Crompton Laboratory type D.C Potentiometer. (16)
- Or
- (b) With neat sketch explain construction and operation of polar type Drysdale A.C Potentiometer. (16)
14. (a) Describe measurement of low resistance using Kelvin double bridge method and obtain expression for unknown resistance. (16)
- Or
- (b) With neat sketch explain measurement of high resistance using Price's guard wire method. (16)
15. (a) Explain in detail the procedure of measurement of inductance and capacitance. (16)
- Or
- (b) (i) With a neat diagram explain the A.C. galvanometer. (8)
- (ii) Explain with a neat sketch the vibration galvanometer. (8)
-