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Question Paper Code: 33505

B.E. / B.Tech. DEGREE EXAMINATION, AUGUST 2021

Third Semester

Electronics and Instrumentation Engineering

01UEI305 - ELECTRICAL MEASUREMENTS

(Regulation 2013)

Duration: 1:45 hour

Maximum: 50 Marks

PART A - (10 x 2 = 20 Marks)

(Answer any ten of the following questions)

1. Compare Ballistic and D'Arsonval galvanometer.
2. How to extend the high range of PMMC ammeter.
3. What is Phantom loading?
4. List various types of error in electro dynamo meter wattmeter.
5. Compare AC and DC potentiometer.
6. Define turn's ratio error in CT.
7. Draw the circuit diagram of megger.
8. What is ground fault?
9. Write the sources and detectors used in AC Bridge.
10. State two applications of vibration galvanometer.
11. Give the expression for deflection in Moving iron ammeter.
12. Define Phantom loading .
13. Why secondary of current transformer should not be open?

14. Design a Wheatstone bridge whose values are $P = 1000 \Omega$, $Q = 100\Omega$, $R = 2005\Omega$ and $S = 200\Omega$. The battery emf is $5V$ with negligible resistance with negligible galvanometer resistance. Calculate the current flowing through the galvanometer.
15. State the balance equation used in A.C bridge methods.

PART – B (3 x 10= 30 Marks)

(Answer any three of the following questions)

16. Explain the working principle of attraction type and repulsion type moving iron instruments with necessary diagrams. (10)
17. Describe the constructional details of an electro dynamometer type wattmeter. Derive the expression for torque when the instrument is used on ac. (10)
18. Explain in detail about the laboratory grade DC potentiometer. (10)
19. Sketch the circuit of a series ohmmeter with a zero control. Explain the circuit operation. (10)
20. With a neat diagram explain principle of working of vibration galvanometer and write the expression for the same. (10)