

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech (EEE) III-Year Semester-V (AICTE) Regular Examinations, Dec-2023/Jan-2024

Paper-II: Measurements and Instrumentation

Time: 3 Hours

Max Marks: 70

Part-A

(10x2=20 M)

Answer all the following questions.

1. What is ammeter?
2. What is meant by an Instrument?
3. What is meant by energy meter?
4. What is meant by single phase meter?
5. What is the difference between digital transducer and analog transducer?
6. What is meant by resistance, inductance, capacitance?
7. What is meant by CT?
8. Draw the B-H Curve.
9. What is meant by Potentiometer?
10. What are the applications of Crompton DC polar meter?

Part-B

(5x10=50 M)

Answer any Five questions

11. (i) Derive the expression for torque of moving coil ammeter and voltmeter.
(ii) Derive the expression for torque for moving iron instrument.
12. (i) Explain Weston type of synchroscope.
(ii) What is meant by Electrical resonance type meters? Explain its features and construction.
13. (i) What is Wien's Bridge? Derive the expression for the frequency.
(ii) Obtain the equations for balance in case of Maxwell's inductance and Capacitance Bridge with necessary phasor diagram.
14. (i) Explain about the Ballistic Galvanometer.
(ii) Determine the B-H curve and Hysteresis loop using CRO.
15. (i) Explain about the Crompton DC potentiometer with a neat sketch.
(ii) Discuss the use of oscilloscope in measurement of frequency, phase and amplitude.
16. (i) What is meant by recording and integrating instruments? Explain its advantages.
(ii) What is the range of moving coil instrument, moving iron instrument, Dynamometer type instruments?
17. (i) Describe about the Desauty's bridge which is used for measurement of capacitance.
(ii) What is the purpose of using kelvin's double bridge for the measurement of low resistance? Explain it by drawing kelvins double bridge.