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VASAVI COLLEGE OF ENGINEERING (Autonomous), HYDERABAD
B.E. II Year (E.E.E.) I-Semester Supplementary Examinations, May/June-2017

Electrical Measurements and Instruments

Time: 3 hours

Max. Marks: 70

Note: Answer ALL questions in Part-A and any FIVE from Part-B

Part-A (10 X 2=20 Marks)

1. Compare analog and digital instruments.
2. What are the essential forces required in an electrical measuring instrument?
3. What is the function of braking system in an energy meter?
4. What are the conditions for synchronization of Alternators?
5. What are the merits of Kelvin's double bridge over a Wheat Stone Bridge?
6. List the various bridges used for measurement of unknown capacitance.
7. What is iron loss and how is it measured?
8. Draw the B-H curve and hysteresis loop with all specifications.
9. Draw the circuit diagram for calibration of voltmeter using potentiometer.
10. Why Secondary of CT should never be open circuited while the primary is energized?

Part-B (5 × 10 = 50 Marks)

(All bits carry equal marks)

11. a) Derive torque expression for a dynamometer type watt-meter.
 b) How do you measure reactive power consumed in a 3- ϕ circuit using single watt-meter.
12. a) Explain the construction and principle of operation of Maximum Demand indicator.
 b) With neat diagram explain the construction and working of electrical resonance type frequency meter.
13. a) What is the function of Schering's bridge? Obtain the balance equation of the bridge.
 b) Describe the principle of operation of Kelvin's double bridge with necessary diagram.
14. a) Describe the method of reversal for plotting B-H curve of a ring specimen.
 b) How do you calibrate the Ballistic Galvanometer by Hibbert's magnetic standard?
15. a) Describe the working principle of polar type AC potentiometer.
 b) Explain the method of calibrating wattmeter using a potentiometer.
16. a) How do you measure active power consumed in a 3- ϕ balanced circuit using single watt-meter.
 b) Explain principle of operation of Synchronoscope.
17. Write short notes on any *two* of the following:
 - a) Ammeter-voltmeter method for measurement of resistance.
 - b) Measurement of 'B' in a ring specimen.
 - c) Calibration of ammeter by using D.C. potentiometer.

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