

Roll No.

OLE-24027

B. Tech. 3rd Sem. (EE) Examination – April, 2021

ELECTRICAL MEASUREMENTS AND MEASURING INSTRUMENTS

Paper : EE-209-F

Time : Three Hours]

[Maximum Marks : 100

Before answering the questions, candidates should ensure that they have been supplied the correct and complete question paper. No complaint in this regard, will be entertained after examination.

Note : Attempt *five* questions in all, selecting *one* question from each Section. Question No. 1 is *compulsory*. All questions carry equal marks.

1. (i) Explain the procedure how to find the errors in measurement. 5 × 4 = 20
- (ii) Give a classification of instruments.
- (iii) Explain single phase electrodynamicometer type power factor meter.
- (iv) Explain wheatstone bridge and its limitations.

SECTION – A

2. Explain the following terms in detail : 20
- (a) Accuracy
 - (b) Precision
 - (c) Sensitivity
 - (d) Resolution
 - (e) Threshold
3. Explain three forces in electromechanical indicating instruments. 20

SECTION – B

4. Explain the construction, working principle and torque equation of PMMC type instrument. 20
5. Explain the construction, operating principle and torque equation of electrodynamic type measuring instrument. 20

SECTION – C

6. Explain the construction, working principle, torque equation and shape of scale of electrodynamic type wattmeter. 20

7. Explain the construction, working principle and torque equation of single phase induction type energy meter. 20

SECTION – D

8. (a) What are the difficulties in measurement of high resistance ? 10
- (b) How to measure high resistance using Megohm bridge ? 10
9. (a) Explain circuit diagram, phasor diagram, advantages and disadvantages of Maxwell's Inductance-capacitance bridge. 10
- (b) How to measure capacitance from De Sauty's bridge. 10
