**RAJ KUMAR GOEL INSTITUTE OF TECHNOLOGY & MANAGEMENT, GZB**

**1st Sessional Examination 2017-18 ( Odd Semester)**

**Roll No.:**  **Subject Name: EMMI**

**Year/Branch**: **2nd/EN Subject Code:NEE-302**

**Max Time: 1Hours 30 Minute Max Marks: 50**

**SECTION-A**

**Q.1 Attempt all parts carry equal marks. Write answer of each part in short. (2x5=10)**

(a) What are standards & explain its classification?

(b) Explain the classification of Errors.

(c) Differentiate between Precision & Accuracy.

(d) Give classification of resistance.

(e) Develope an application of Wein's Bridge..

**SECTION-B**

**Note: Attempt any five questions from this section. (5x5=25)**

**Q.2** Two resistance R1 and R2 are connected in parallel with R1=10K ohm +-5% & R2= 5K ohm +- 10%. Calculate the percentage error and range of combined resistance.

**Q.3** Explain the process of measurment of medium resistance by Ammeter Voltmeter method.

**Q.4** Explain PMMC type ammeter.Discuss why it is not suitable for AC supply.

**Q.5** Current was measured during a test as 20.5 A flowing in a resistor of 0.2ohm. It was found that the Ammeter reading was low by 1.3% while the resistance value was high by 0.5%. Find the power as a percentage of the power that was originally calculated.

**Q.6** How can we extend the range of an ammeter using Shunt wire & discuss about the effect of thermo couplein case of shunt made of different metal.

**Q.7** Derive the balanced equation for modified Desauty Bridge for the measurment of capacitance.

**Q.8**A certatin resistor has a voltage drop of 110.2 V and a current of 5.3A. The uncertainties in the measurments are +/- 0.2V & +/- 0.06 A respectively. Calculate the power dissipated in the resistor and the uncertainty in power.

**Q.9** Why always Dc supply is used for the measurment of resistance ?Explain briefly.

**SECTION-C**

**Note: Attempt any two questions from this section. (7.5x2=15)**

**Q.10** Draw the circuit & derive the balanced equation of Anderson's Bridge for the measurment of inductance.

**Q.11** The basic Ac bridge consist of following constants

Arm AB : C=0.2 micro F Arm BC: R=500 ohm Arm CD: unknown Arm AD: R=300ohm in parallel with C=0.1 micro F. The source oscillator frequency is 1 KhZ.Determine the constant of Arm CD cosidering it as a series circuit.

**Q.12** Draw the circuit & derive the equation for max sensitivity of wheatstone bridge.