Menoufia University
Faculty of Electronic Eng.
Industrial Elect. and Control Dept.
First Year Exam.

2nd Term Exam 2018-2019
Time allowed: 1 ½ hour
Subject: Electrical Meas.
Date: 13/ 6/ 2019

Part 1

Answer all the following questions

Question No.1

1- Give a detail explanation with the help of sketches for each of the following:
   - i- Zero order measuring instrument characteristic.
   - ii- First order measuring instrument characteristic.
   - iii- Digital measuring instrument.

2- A voltmeter and an ammeter are to be used to determine the power dissipated in a resistor. Both instruments are guaranteed to be accurate within ±1% at full-scale deflection. If the voltmeter reads 80 V on its 150 V range and the ammeter reads 70 mA on its 100 mA range. Determine the limiting error for the power calculation?.

Question No.2

1- Define each of the following with the help of sketches and mathematical relations:
   - i- Padded source.   ii- Bridged T- attenuator.

2- A 50 Ω source of voltage with open circuit voltage of 2 volts rms is connected to a symmetrical T attenuator which has R_O = 50 Ω and a_{db} = 18 db. What is the Thevenin equivalent of the output terminal of the attenuator?.

Question No.3

Indicate the problem of the frequency limiting effect of the voltage divider, and hence derive a mathematical relation for the frequency compensation of the voltage divider? (Demonstrate your answer with sketches).

With My Best Wishes