Registration no: | | | | | | | | | | |

Total Number of Pages: 02 **B.Tech**
PCEE4204

3rd Semester Back Examination 2016-17
ELECTRICAL AND ELECTRONICS MEASUREMENT
BRANCH(S): AEIE, ECE, EIE, ETC
Time: 3 Hours
Max Marks: 70
Q.CODE: Y584

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 **Answer the following questions:** **(2 x 10)**

a) Give at least two most common methods for measurement of low resistance.
b) List any four Static characteristics of a measuring system.
c) What is exact difference between accuracy and Precision?
d) Mention the two modes of operation in dual trace oscilloscope.
e) Give the functions of an attenuator in a signal generator.
f) What is the important of gate time in frequency counter?
g) Give any two applications of micro processor based measurement.
h) Mention the term used to specify the characteristics of an instrumentation amplifier.
i) Differentiate between sensors and transducers.
j) What are the sources of errors in D.C voltage measurement?

Q2 With help of neat sketch, explain the construction and working of an electrodynamometer power factor meter. **(2+8)**

Q3 **a)** Design a multi range d.c millimeter with a basic meter having a resistance of 75ohms and full scale deflection for a current of 2mA. The required ranges are 0-10mA, 0-50mA and 0-100Ma. **(6)**

b) Explain the Kelvin's Double bridge and obtain the balance condition. **(4)**

Q4 **a)** Briefly explain the calibration and adjustments of a single phase induction type energy meter. **(5)**

b) Explain the operation of LVDT, with help of a diagram. **(5)**

Q5 **a)** How the frequency is converted to an analog signal? Explain. **(5)**

b) Explain any one bridge circuit for measurement of Inductance. **(5)**

Q6 **a)** Briefly explain the basic elements of a digital acquisition system. **(5)**

b) For 20A, 230V energy meter, the revolution per Kilowatt-hour is 480. If upon test at full load unit power factor the dic makes 40 revolution in 66 seconds, calculate the error in the energy meter. **(5)**

Q7 With a neat schematic, explain the operation of a dual slope analog to digital conversion. **(10)**

Q8 **Write short answer on any TWO:** **(5 x 2)**

a) Photo Voltaic Cell
b) X-Y recorder
c) Megger
d) Ramp type DVM