ID.No./Seat No. 10EL125

MEHRAN UNIVERSITY OF ENGINEERING AND TECHNOLOGY,
JAMSHORO.

FIRST TERM THIRD YEAR (5TH TERM) B.E.(ELECTRICAL) SUPPLEMENTARY EXAMINATION 2012 OF 05 TO 09-BATCHES.

INSTRUMENTATION & MEASUREMENT

Dated: 12-03-2012 Time allowed: 03 Hours. Max Marks:80

NOTE: ATTEMPT ANY **FIVE** QUESTIONS. ALL QUESTIONS CARRY EQUAL MARKS.

Q.No.

01: Describe the difference between indicating, recording and integrating instrument. Give application of each type.

02: Explain with the help of neat diagram the construction and principle of operation of single phase induction type energy meter.

03: (a) What are the general requirements of shunts and multiplier.

(b) An ammeter has full scan reading of 1A. it has a resistance of 1Ω. Calculate the shunt resistance to make it read 2A, 4A and 8A.

(c) A moving coil instrument has a resistance of 10Ω and tax 25mA to produce FSD. How can the instrument be adopted to measure (a) voltage up to 120 volts (b) Current up to 20A.

04: Describe the electro dynamometer principle. Explain with sketches how the electro dynamometer principle is applied to a volt meter, ammeter and watt meter.

05: What are the instrument transformers? Describe briefly.

06: Diagram the parts of CRT. Describe how horizontal and vertical deflections can show the wave form on a CRT.

07: (a) Draw circuit diagram of Maxwell Wien Bridge and determine an equation which gives its "Condition of Balance".

(b) At balance the three known impedances of the AC Bridge

Z1= 200Ω L 60
Z2= 150Ω
Z3= 100 + J300Ω

Draw the bridge circuit and determine the unknown impedances "ZX" in polar form.

08: Write brief notes on any three of the following.

1. Dynamometer type single phase power factor meter
2. Wheat stone bridge
3. Electrical resonance frequency meter-ferrodynamic type
4. Systematic errors
5. D.C Tachometer Generator

----------THE END----------

ASHFAQUE BALOCH