

# C.U.SHAH UNIVERSITY

## Winter Examination-2015

**Subject Name:** Electronics Measurement

**Subject Code:** 4TE03ELM1

**Branch:** B.Tech (EC)

**Semester:** 3    **Date:** 10/12/2015    **Time:** 2:30 To 5:30    **Marks:** 70

**Instructions:**

- (1) Use of Programmable calculator & any other electronic instrument is prohibited.
  - (2) Instructions written on main answer book are strictly to be obeyed.
  - (3) Draw neat diagrams and figures (if necessary) at the right places.
  - (4) Assume suitable data if needed.
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**Q-1**

**Attempt the following questions**

**(14)**

- a) Which type of instrument is used for DC as well as AC measurement  
1) PMMC    2) Induction    3) Electrodynamometer    4) none
- b) Moving iron type instrument depends upon the magnitude effect of  
1) Voltage    2) current    3) power    4) flux
- c) The induction principle is mostly used for  
1) Ammeters    2) Voltmeters    3) Watt-hour meters    4) none
- d) Which type of display produces by the CRO?  
1) 1D    2) 2D    3) 3D    4) none
- e) The CRO basically an electron beam  
1) Ammeter    2) Voltmeter    3) Watt-hour meter    4) none
- f) The dual beam CRO uses  
1) two sets of VDPs    2) one set of HDPs    3) both mentioned    4) none
- g) Which bridge is used for measurement of resistance below  $1\Omega$   
1) Wheatstone    2) Kelvin    3) Maxwell    4) none
- h) Maxwell's bridge is used for measurement of inductance of the coil have  
1) low Q    2) Medium Q    3) High Q    4) all mentioned
- i) Wien's bridge is used for measurement of  
1) resistance    2) capacitance    3) frequency    4) 2 & 3
- j) In LED, \_\_\_\_\_ is used  
1) Si    2) GaP    3) GaAsP    4) 2 and 3
- k) Environmental errors occur in instruments due to the  
1) external condition    2) internal condition    3) 1 and 2    4) none
- l) Thermocouple type instrument can be used for measurement of  
1) ac    2) dc    3) 1 and 2    4) none
- m) In the electrodynamic type instrument, the magnetic field is provided by  
1) Movable coil    2) permanent magnet    3) 1 and 2    4) none
- n) A spectrum analyzer is used to display signals in  
1) time domain    2) frequency domain    3) 1 and 2    4) none



**Attempt any four questions from Q-2 to Q-8**

- Q-2 Attempt all questions (14)**
- (a) Describe various types of static errors in measuring instruments. (05)
  - (b) What is standard? Explain different types of standards. (05)
  - (c) Briefly explains with diagrams multirange and universal shunt type ammeters. (04)
- Q-3 Attempt all questions (14)**
- (a) Explain with neat block diagram, the working of a dual slop digital voltmeter (07)
  - (b) Describe digital storage oscilloscope with schematic block diagram and state its applications. (07)
- Q-4 Attempt all questions (14)**
- (a) Explain working of Kelvin's double bridge for the measurement of low resistance with neat diagram. (07)
  - (b) Explain measurement of inductance with the help of Hay's Bridge. Write advantages and disadvantages of Hay's Bridge. (07)
- Q-5 Attempt all questions (14)**
- (a) Describe the construction and working of L.V.D.T. with neat sketches. Draw its output characteristics. State advantages and disadvantages of it. (07)
  - (b) Describe the construction, theory and working of thermocouples. (07)
- Q-6 Attempt all questions (14)**
- (a) Explain with neat block diagram, the working of a function generator. (07)
  - (b) Explain with neat block diagram, the working of a frequency selective wave analyzer. (07)
- Q-7 Attempt all questions (14)**
- (a) Explain with neat block diagram, the working of a heterodyne wave analyzer. (07)
  - (b) Explain with neat block diagram, the working of a spectrum analyzer. (07)
- Q-8 Attempt all questions (14)**
- (a) Enlist different types of digital to analog converter configurations and explain any one of them in detail with diagram. (07)
  - (b) State the different elements of data logger and with the help of a neat block diagram explain the functions of each block. (07)

