Q.P. Code: **16EC416**

R16

**Reg. No:** 

**ELECTRONIC MEASUREMENTS AND INSTRUMENTATION**
(Electronics and Communication Engineering)

Time: 3 hours | Max. Marks: 60

(Answer all Five Units **5 x 12 = 60** Marks)

## UNIT-I

1  a  Explain with the help of circuit diagram the construction & working of a series type ohm meter.  **8M**

   b  Define sensitivity. Calculate the sensitivity of a 200 µA meter movement which is to be used as a dc voltmeter.  **4M**

**OR**

2  a  Explain with the help of circuit diagram the construction & working of a series type ohm meter.  **6M**

   b  With neat sketch explain thermocouple type RF ammeter.  **6M**

## UNIT-II

3  a  Explain with the block diagram how the digital frequency and time period can be measured using Counter/meter instrument.  **8M**

   b  Draw the neat diagrams of vertical deflection systems and explain briefly about their working.  **4M**

**OR**

4  a  Explain the major parts of CRT with a block diagram.  **7M**

   b  Discuss in detail, the construction and working of a digital sampling oscilloscope.  **5M**

## UNIT-III

5  a  With help of a neat sketch, explain the working of a frequency selective wave analyser.  **6M**

   b  Explain how wave analyser can be tuned to a particular frequency within the audible frequency range.  **6M**

**OR**

6  a  Describe the diagram with operation of a harmonic distortion analyser using Wein bridge and frequency selective type.  **5M**

   b  Draw the circuit diagram and explain the working of a heterodyne type wave analyser.  **7M**

## UNIT-IV

7  a  Describe the operation of the Wheatstone bridge and derive the expression for DC resistance.  **6M**

   b  A Maxwell bridge is used to measure an inductive impedance the bridge constants at balance are C1=0.01 µF, R1=470KΩ, R2=5.1 KΩ and R3=100 KΩ. Find the series equivalent of the unknown impedance.  **6M**

**OR**

8  a  Draw the Anderson's bridge circuit and derive necessary equations& explain it.  **6M**

   b  List the applications of schering bridge circuit.  **6M**

UNIT-V

9    a  With a neat sketch explain the operation of LVDT.                                          8M
     b  Define a transducer. List the applications.                                                4M

**OR**

10   a  Draw the diagram of Resistance Thermometer & explain briefly.                             6M
     b  Discuss about signal conditioning circuits.                                                6M

*** END ***