

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2015

Subject Code: 2141704**Date:30/05/2015****Subject Name: MEASUREMENT & INSTRUMENTS****Time:10:30am-1.00pm****Total Marks: 70****Instructions:**

1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

- Q.1** (a) Define and explain Indicating and Recording type of instruments **07**
 (b) Draw and explain Analog to Digital convertor **07**
- Q.2** (a) Explain loading effect and their elimination in AC and DC meters **07**
 (b) Write a short note on sweep – frequency generator **07**
- OR**
- (b) Write a short note on Pulse generator **07**
- Q.3** (a) Explain d'Arsonval galvanometer movement in detail. **07**
 (b) Explain Maxwell bridge. **07**
- OR**
- Q.3** (a) Design a multirange ammeter with ranges of 0-1mA, 0-100mA and 0-10A, using a 100 μ A movement whose internal resistance is 2000 Ω . show a circuit diagram of the meter you have designed. **07**
 (b) Determine the expression for unknown resistance Rx in case of Kelvin double bridge. **07**
- Q.4** (a) Draw all Lissajous patterns of oscilloscope **07**
 (b) Write short note on vertical deflection system of oscilloscope **07**
- OR**
- Q.4** (a) List out oscilloscope probes and explain any two of them **07**
 (b) Explain frequency measurement using zero-beat frequency meter. **07**
- Q.5** (a) Write a short note on spectrum analyzer. **07**
 (b) Write a short note on magnetometer. **07**
- OR**
- Q.5** (a) Write a short note on single phase power measurement. **07**
 (b) Explain 2 watt-meter method to measure 3-phase power. **07**
