

Code No: 115AM

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD

B.Tech III Year I Semester Examinations, February/March - 2016

ELECTRONIC MEASUREMENTS AND INSTRUMENTATION

(Electronics and Communication Engineering)

Time: 3 hours

Max. Marks: 75

**Note:** This question paper contains two parts A and B.

Part A is compulsory which carries 25 marks. Answer all questions in Part A.

Part B consists of 5 Units. Answer any one full question from each unit.

Each question carries 10 marks and may have a, b, c as sub questions.

**Part- A****(25 Marks)**

- |      |   |     |
|------|---|-----|
| 1.a) | What are random errors?                           | [2] |
| b)   | Compare Moving coil with Moving iron instruments. | [3] |
| c)   | What is known as duty cycle?                      | [2] |
| d)   | Define pulse period.                              | [3] |
| e)   | List main parts of CRT.                           | [2] |
| f)   | What is dual trace CRO?                           | [3] |
| g)   | What is the principal of LVDT?                    | [2] |
| h)   | What are the different types of strain gauges?    | [3] |
| i)   | Define Rise time, fall time.                      | [2] |
| j)   | Define rounding.                                  | [3] |

**Part-B****(50 Marks)**

- 2.a) Define :
- Sensitivity
  - Resolution
  - Static sensitivity
  - Absolute error.
- b) Draw the block diagram of a multimeter and explain its function detail. [5+5]

**OR**

- 3.a) Explain about True RMS Responding Voltmeters.
- b) With neat diagram explain the construction, working, torque equation and Advantages, disadvantages of PMMC instrument. [3+7]

- 4.a) Explain about Heterodyne wave Analyzers.
- b) Write about Square wave Generators. [5+5]

**OR**

- 5.a) Explain about AF Signal Generators in detail.
- b) Explain about Specifications of Video Signal Generators. [5+5]

6. Explain with block diagram of Sweep frequency generator. [10]

**OR**

7. Write in detail about Storage Oscilloscopes with neat sketch. [10]

- 8.a) Explain the operation of RTD with a neat sketch.  
b) Write in detail about Synchros. [5+5]

**OR**

- 9.a) Explain about Displacement Transducers.  
b) Explain in detail about Magnetostrictive Transducers. [5+5]

- 10.a) With the help of circuit diagram explain the Maxwell Bridge.  
b) Explain about Special Resistance Thermometers. [5+5]

**OR**

- 11.a) Explain about Displacement Meter in detail.  
b) Write in detail about Measurement of Humidity and Moisture. [5+5]

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