

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 :   |       |
|           | i) Sensitivity   |       |
|           | ii) Resolution   |       |
|           | iii) Static sensitivity  |       |
|           | iv) Absolute error.  |       |
| b)        | Draw the block diagram of a multimeter and explain its function detail.  | [5+5] |
| <b>OR</b> |  |       |
| 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] |
| <b>OR</b> |  |       |
| 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]  |
| <b>OR</b> |  |       |
| 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]

--ooOoo--