**18EI402**

**Hall Ticket Number:**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |  |  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **II/IV B.Tech (Regular/Supplementary) DEGREE EXAMINATION** | | | |
| **July, 2021** | **Electronics and Instrumentation Engineering** | | |
| **Fourth Semester** | **Electrical and Electronics Measurements** | | |
| **Time:** Three Hours | | **Maximum: 5**0 Marks | |
| |  |  | | --- | --- | | ***Answer question number one compulsary.*** |  | | ***Answer any one question from each unit.*** |  |   **A1. Answer all questions** | | | **(1X10 = 10 Marks|)**  **(4X10=40 Marks)**  **(1X10 = 10 Marks|)** |

1. Define sensitivity of a volt meter.
2. Define accuracy of an instrument.
3. Differentiate series type and shunt type ohm meters.
4. What is the significance of Wagner ground connection?
5. Define form factor.
6. Mention the two conditions for AC bridge balancing?
7. Write the applications of Wien bridge.
8. What is the purpose of aquadag coating in CRO?
9. Define phosphorescence.

j) Define deflection factor (G) of a CRT?

**UNIT-1**

**2.** a) Explain different types of measurement errors with examples. (5M)

b) Explain the construction and working principle of electrodynamo meter watt meter. (5M)

**(OR)**

**3.** a) Describe the circuit diagram of a series type ohmmeter. Explain how is it designed? (5M)

b) Explain the construction and working principle of power factor meter. (5M)

**UNIT-1I**

**4.** a) Explain the working of Hay’s bridge for measurement of inductance with a circuit diagram. Derive

the equations for balance and draw the phasor diagram under balanced conditions. (5M)

b) Explain the principle of Wheatstone bridge and obtain the expression for the current through the galvanometer using its Thevnin’s eqvivalent circuit . (5M)

**(OR)**

**5.** a) Draw the block diagram of a Staircase-Ramp type DVM and explain its operation. (5M)

b) Explain, with the help of a block diagram, the various parts of an electronic multimeter. (5M)

**UNIT-1II**

**6.** a) Explain the block diagram of a CRO with a neat sketch. (5M)

b) Explain the principle of sampling oscilloscope with neat diagram . (5M)

**(OR)**

**7.** a) Explain about different types of oscilloscope probes (5M)

b) Describe the principle of working and circuit diagram of a digital storage oscilloscope. (5M)

**UNIT-1V**

**8.** a) With a neat schematic explain the basic elements of a function generator. (5M)

b) Draw the block diagram of frequency divider type of signal generator with frequency modulation and

explain its function. (5M)

**(OR)**

**9.** a) How can we extend the frequency range of the counter ,explain with neat block diagram ? (5M)

b) Explain the measurement of errors in the frequency and time measurements made by an electronic counter. (5M)

****