Reg. No. \_\_\_\_\_\_\_\_\_\_\_\_\_



**End Semester Examination – Nov / Dec – 2019**

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| **Code :** | **14EI2041** | **Duration :** | **3hrs** |
| **Sub. Name :** | **MEASUREMENTS AND INSTRUMENTATION** | **Max. Marks :** | **100** |

**ANSWER ALL QUESTIONS (5 x 20 = 100 Marks)**

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| **Q. No.** | **Sub Div.** | **Questions** | **Course**  **Outcome** | **Marks** |
| 1. | a. | Describe the construction and working of PMMC (Permanent Magnet Moving coil Instrument). Derive its torque equation. | CO1 | 15 |
| b. | Explain the functional blocks of instrumentation system with the suitable example. | CO1 | 5 |
| **(OR)** | | | | |
| 2. |  | Enumerate the principle of operation and construction of Single-Phase Induction Type Energy Meter with neat diagram. | CO1 | 20 |
|  |  |  |  |  |
| 3. |  | Draw the circuit of Kelvin double bride and deduce the balance condition. | CO1 | 20 |
| **(OR)** | | | | |
| 4. | a. | Describe how an unknown inductance is measured with the help of Maxwell’s Inductance-Capacitance Bridge. Comment on its Q factor. Derive the bridge balance condition. | CO1 | 10 |
| b. | Illustrate how an unknown capacitance is measured with the help of D’Sauty’s bridge. | CO1 | 10 |
|  |  |  |  |  |
| 5. |  | Discuss the principle and working of different temperature sensors. Sketch their typical characteristics. | CO1 | 20 |
| **(OR)** | | | | |
| 6. |  | Explain the circuit of RC phase shift oscillators. Describe how Barkhausen criteria are satisfied in this oscillator. | CO2 | 20 |
|  |  |  |  |  |
| 7. | a. | Give the block diagram of frequency selective wave analyser and describe its working. | CO2 | 15 |
| b. | Write the necessity of harmononic distortion analyzer. | CO2 | 5 |
| **(OR)** | | | | |
| 8. |  | Give an overview of different digital display devices. | CO2 | 20 |
|  | | **Compulsory**: |  |  |
| 9. | a. | Describe the functioning of a basic type of XY recorder with the necessary sketches. | CO2 | 10 |
| b. | Enumerate with a block diagram, the various elements involved in a digital data acquisition system. | CO2 | 10 |