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



**End Semester Examination – Nov/Dec– 2017**

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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 | 10 |
| b. | Why is Damping Torque necessary in indicating instruments? Sketch the curves showing the different damping conditions. | CO1 | 10 |
| (OR) | | | | |
| 2. | a. | Explain with a block diagram, the various systems involved in an Energy meter. | CO1 | 15 |
| b. | Derive the torque equation for Electrodynamometer type instruments. | CO1 | 5 |
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| 3. | a. | Illustrate how an unknown capacitance is measured with the help of D’Sauty’s bridge. | CO1 | 10 |
| b. | 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 |
| (OR) | | | | |
| 4. | a. | Discuss the principle and working of different temperature sensors. Sketch their typical characteristics. | CO2 | 10 |
| b. | Outline the concepts of any one method used in speed measurement. | CO2 | 10 |
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| 5. |  | Explain the circuit of RC phase shift oscillators. Describe how Barkhausen criteria are satisfied in this oscillator. | CO2 | 20 |
| (OR) | | | | |
| 6. |  | Illustrate the circuit and working of a Monostable multivibrator. | CO2 | 20 |
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| 7. | a. | Draw the block diagram of frequency selective wave analyser and describe its working. | CO2 | 15 |
| b. | Identify the necessity of harmononic distortion analyzer. | CO2 | 5 |
| (OR) | | | | |
| 8. |  | Outline an overview of different digital display devices | CO2 | 20 |
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|  | | **Compulsory:** |  |  |
| 9. | a. | Describe the functioning of a basic type of XY recorder. Explain the different types of marking mechanisms used in it. | CO2 | 12 |
| b. | Elaborate with a block diagram, the various elements involved in a digital data acquisition system. | CO2 | 8 |

ALL THE BEST