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



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

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| **Code :** | **17EI2041** | **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. | Discuss the constructional details of moving iron repulsion type and attraction type instrument with the neat diagram. | CO1 | 15 |
| b. | Explain the functional blocks of instrumentation system with the suitable example. | CO1 | 5 |
| (OR) | | | | |
| 2. | a. | In a survey of 12 owners of certain model of car, the following figures for average petrol consumption were reported, 29.6, 32.4, 28.9, 30.0, 33.3, 31.4, 29.5, 30.5, 31.7, 33.0, 29.2. Calculate:  (i) Mean (ii) Mean Deviation (iii) Standard Deviation (iv) Variance. | CO1 | 20 |
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| 3. | 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. | CO2 | 20 |
| (OR) | | | | |
| 4. | a. | Describe in detail the circuit and working of an astable multivibrator. | CO5 | 20 |
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| 5. | a. | Describe the working of RC phase shift oscillator with a neat circuit diagram. | CO5 | 20 |
| (OR) | | | | |
| 6. | a. | Classify the types of wave analyzers. With a neat sketch, explain the operation of any one wave analyzer. | CO6 | 20 |
|  |  |  |  |  |
| 7. | a. | With neat block diagram, explain the working principle and measurement of voltage and frequency of a CRO. | CO2 | 20 |
|  |  |  |  |  |
| (OR) | | | | |
| 8. | a. | Give an overview of different digital display devices. | CO6 | 10 |
|  | b. | Enumerate with a block diagram, the various elements involved in a digital data acquisition system | CO4 | 10 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. | a. | Discuss the principle and working of any two temperature sensors. Sketch their typical characteristics. | CO3 | 20 |