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



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

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| **Code :** | **14ME2006** | Duration : | **3hrs** |
| **Sub. Name :** | **METROLOGY AND MEASUREMENT SYSTEMS** | 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. | What are the various standards in metrology? | CO1 | 5 |
| b. | Describe in detail the different types of errors which occur in measurement. | CO1 | 15 |
| (OR) | | | | |
| 2. | a. | Write short notes on:  i) accuracy ii) precision iii) sensitivity iv) readability | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Explain mechanical comparator with a neat sketch. | CO1 | 10 |
|  | b. | With a neat sketch explain the construction of a Vernier Calliper. | CO1 | 10 |
| (OR) | | | | |
| 4. | a. | What are sine centers? How are they used? | CO1 | 10 |
|  | b. | How to find the least count of a Micrometer? | CO1 | 10 |
|  |  |  |  |  |
| 5. | a. | With a neat sketch, describe the construction and application of pneumatic comparator in quality control. | CO1 | 10 |
|  | b. | How are slip gauges used? What is wringing in slip gauges? | CO1 | 10 |
| (OR) | | | | |
| 6. | a. | With a neat sketch, describe the construction and working of the Talyor-Hobson-Talysurf surface roughness tester. | CO2 | 15 |
|  | b. | Define flatness. How can flatness be checked? | CO2 | 5 |
|  |  |  |  |  |
| 7. | a. | Explain the methods available for the measurement of major and minor diameter of threads. | CO2 | 20 |
| (OR) | | | | |
| 8. | a. | Explain the construction and working principle of tool maker’s microscope with neat sketch. | CO2 | 20 |
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|  | | **Compulsory**: |  |  |
| 9. | a. | Explain the working principle of Coordinate Measuring Machine. List its advantages and disadvantages. | CO2 | 20 |