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



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

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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. | Briefly explain the different methods of measurement. | CO1 | 12 |
| b. | Write short notes on sensitivity of measuring instruments. How sensitivity affect the process of quality control? | CO1 | 8 |
| (OR) | | | | |
| 2. | a. | Describe in detail the different types of static and dynamic errors. What are the steps which can be taken to minimize the occurrence of these errors in measurement? | CO1 | 20 |
| 3. | a. | Why 'wringing process' is carried out while using slip gauges?  Explain the procedure for wringing. | CO1 | 6 |
|  | b. | With a neat sketch enumerate the working principle and construction of plunger type dial indicator. List out its applications. | CO1 | 14 |
| (OR) | | | | |
| 4. | a. | With a neat sketch explain the construction of a vernier caliper. | CO1 | 12 |
|  | b. | Explain the possible ways of taking measurements using vernier caliper. | CO1 | 8 |
| 5. | a. | Explain the construction and working of Sigma Comparator with a neat sketch. | CO1 | 10 |
|  | b. | With a neat sketch describe the construction and application of pneumatic comparator in quality control. | CO2 | 10 |
| (OR) | | | | |
| 6. | a. | With a neat sketch, describe the construction and working of the Talyor-Hobson-Talysurf surface roughness tester. | CO2 | 14 |
|  | b. | With neat sketch describe the elements of surface texture. | CO1 | 6 |
| 7. |  | Explain the methods available for the measurement of major and minor diameter of external and internal screw threads. | CO1 | 20 |
| (OR) | | | | |
| 8. |  | Define effective diameter and derive an expression for finding effective diameter of screw thread using three wire method. How to find the best wire size for the measurement of effective diameter? | CO1 | 20 |
|  | | **Compulsory**: |  |  |
| 9. |  | Describe the construction and working of laser interferometer. List out its advantages, disadvantages and applications. | CO2 | 20 |

ALL THE BEST