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

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**End Semester Examination – Nov/Dec – 2018**

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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. |  | Describe the following terms and discuss their significance in quality control? i. Accuracy ii. Precision iii. Sensitivity iv. Readability | CO1 | 20 |
| (OR) | | | | |
| 2. |  | What is ‘calibration’? What are the requirements during a calibration procedure? Outline the steps involved in calibration. | CO1 | 20 |
|  |  |  |  |  |
| 3. | a. | Enumerate the working principle, construction and working of plunger type dial indicator. List out its applications. | CO1 | 14 |
| b. | Explain the process of ‘Wringing’ in slip gauges. | CO1 | 6 |
| (OR) | | | | |
| 4. | a. | Enumerate the principle, working, advantages and disadvantages of Pneumatic Comparator. | CO1 | 12 |
| b. | What are all the possible ways by which it can be used for taking measurement? | CO1 | 8 |
|  |  |  |  |  |
| 5. | a. | With a neat sketch outline the procedure for setting an angle using a Sine bar. | CO1 | 8 |
| b. | Explain the working principle of Tomlinson surface meter with a neat sketch | CO2 | 12 |
| (OR) | | | | |
| 6. |  | Illustrate the measurement of straightness using straight edge, spirit level and autocollimator method. | CO2 | 20 |
|  |  |  |  |  |
| 7. |  | Describe the construction and working of tool makers microscope with a neat sketch. List out its practical applications in metrology. | CO2 | 20 |
| (OR) | | | | |
| 8. |  | Explain the methods available for the measurement minor diameter of external and internal screw threads. | CO1 | 20 |
|  | |  |  |  |
|  | | **Compulsory**: |  |  |
| 9. |  | Describe the construction and working of Coordinate Measuring Machine. State its advantages, disadvantages and applications in different fields of manufacturing. | CO2 | 20 |