

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

Name: \_\_\_\_\_

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY  
THIRD SEMESTER B.TECH DEGREE EXAMINATION(S), MAY 2019**

**Course Code: MR205**

**Course Name: SCIENCE OF MEASUREMENTS**

Max. Marks: 100

Duration: 3 Hours

**PART A**

*Answer all questions, each carries 5 marks.*

- |   |                                                         |   |
|---|---------------------------------------------------------|---|
| 1 | Explain any 5 methods of measurement.                   | 5 |
| 2 | With a neat figure, explain high gain feedback.         | 5 |
| 3 | Compare and contrast primary and secondary transducers. | 5 |
| 4 | Write a note on liquid in glass thermometer.            | 5 |
| 5 | What is wringing? Explain the procedure                 | 5 |
| 6 | Write a note on angle measurement using angle dekkor.   | 5 |
| 7 | What are the types of errors in thread?                 | 5 |
| 8 | Explain the working of bench micrometer.                | 5 |

**PART B**

*Answer any three questions, each carries 10 marks.*

- |    |                                                                            |    |
|----|----------------------------------------------------------------------------|----|
| 9  | What is propagation of uncertainty? Explain Kline Mclintock method         | 10 |
| 10 | Write a note on zero order, first order and second order measuring devices | 10 |
| 11 | a) What is the use of a strain gauge?                                      | 2  |
|    | b) Explain the term gauge factor and derive the formula for a strain gauge | 8  |
| 12 | With a neat figure, explain McLeod gauge working.                          | 10 |
| 13 | What is method of opposing input?                                          | 10 |

**PART C**

*Answer any two questions, each carries 15 marks.*

- |    |                                                                  |    |
|----|------------------------------------------------------------------|----|
| 14 | Explain the working of autocollimator with a figure              | 15 |
| 15 | a) What is a sine bar? Explain with a figure                     | 8  |
|    | b) What is the role of slip gauges in measurement using sine bar | 7  |
| 16 | Explain the classification of pitch errors                       | 15 |
| 17 | Write a note on Two wire method & Three wire method              | 15 |