

# CBCS Scheme

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## Third Semester B.E. Degree Examination, Dec.2017/Jan.2018 Mechanical Measurements and Metrology

Time: 3 hrs.

Max. Marks: 80

Note: Answer FIVE full questions, choosing one full question from each module.

### Module-1

- 1 a. List the objectives of Metrology. (04 Marks)  
b. Explain with a neat sketch, International Prototype meter. (06 Marks)  
c. With a neat sketch, explain Sine Center. (06 Marks)

OR

- 2 a. With a neat sketch, explain Autocollimator. (10 Marks)  
b. Write a note on Wringing phenomenon of Slip Gauge. (06 Marks)

### Module-2

- 3 a. With a neat sketch, explain hole basis system and shaft basis system. (10 Marks)  
b. Explain types of Fits. (06 Marks)

OR

- 4 a. With a neat sketch, explain LVDT. (10 Marks)  
b. With a neat sketch, explain Zeiss – Ultra Optimeter. (06 Marks)

### Module-3

- 5 a. Derive expression for effective diameter of screw threads by 2 wire methods. (10 Marks)  
b. With a neat sketch, explain Gear tooth terminology. (06 Marks)

OR

- 6 a. Derive expression for best size wire. (10 Marks)  
b. Explain with neat sketch, tool maker's microscope. (06 Marks)

### Module-4

- 7 a. With a neat block diagram, explain generalized measurement system. (10 Marks)  
b. Write classification of errors. (06 Marks)

OR

- 8 a. With a neat sketch, explain Cathode ray oscilloscope. (10 Marks)  
b. Explain with a neat sketch, Oscillography. (06 Marks)

### Module-5

- 9 a. With a neat sketch, explain Absorption dynamometer. (10 Marks)  
b. With a neat sketch, explain McLeod gauge. (06 Marks)

OR

- 10 a. With a neat sketch, explain Thermocouple. (10 Marks)  
b. Explain Laws of Thermocouple. (06 Marks)

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important note  
2. Any revealing of identification, appeal to evaluator and the  
draw diagonal cross lines on the remaining blank pages.