

**B.Tech. SEM -VI Mechanical 2014 Course (CBCS) : WINTER - 2018**

**SUBJECT: MECHANICAL MEASUREMENT & METROLOGY**

Day: Friday  
Date: 16/11/2018

**W-2018-2494**

Time: 10.00 AM TO 01.00 PM  
Max. Marks: 60

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**N.B.:**

- 1) All questions are **COMPULSORY**.
  - 2) Figures to the right indicate **FULL** marks.
  - 3) Assume suitable data if necessary.
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**Q.1** Define the following terms: (10)  
a) Measuring Lag                      b) Overshoot                      c) Speed of response  
d) Dead time and dead zone      e) Fidelity & dynamic error

**OR**

**Q.1** Which are the standard test input signals used in control system analysis? (10)  
Explain in brief.

**Q.2** Explain the construction and use of the following: (10)  
a) Depth Micrometer                      b) Vernier height gauge

**OR**

**Q.2** Write a short note on following: (10)  
a) Angle Dekkor                      b) Dial Gauge

**Q.3** Explain how temperature can be measured using thermocouple. Give a suitable circuit diagram. (10)

**OR**

**Q.3** Draw a neat sketch & explain how McLeod gauge is used to measure the vacuum pressure? (10)

**Q.4** Explain in detail the concept of interchangeability in manufacturing. (10)

**OR**

**Q.4** Draw the conventional diagram of limits and fits and explain the terms: (10)  
a) Basic Size                      b) Upper deviation      c) Lower deviation  
d) Fundamental deviation      e) Zero line.

**Q.5** List the different types of sensors used for measurement of displacement. (10)  
Explain in detail use of LVDT for measurement of displacement.

**OR**

**Q.5** Explain a suitable method for flow measurement of corrosive fluids. (10)

**Q.6** By using optical flat and monochromatic light, explain the procedure to determine whether the given surface is flat or curved. (10)

**OR**

**Q.6** Describe a gear tooth Vernier caliper and explain its use for checking tooth thickness and depth of tooth. (10)

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