



PRESIDENCY UNIVERSITY, BENGALURU  
SCHOOL OF ENGINEERING

Max Marks: 30

Max Time: 55 Mins

Weightage: 15 %

Set A

TEST 3

II Semester 2016-2017

Course: ME A 210 Engineering Metrology  
and Measurement

21 April 2017

Instructions:

- i. Write legibly and draw free-hand sketches, wherever necessary.
- ii. Scientific and non-programmable calculators are permitted.

Part A

(2Q x 4 M= 8 Marks)

1. List out any four mechanical pressure sensors for measuring pressure?
2. Discuss the importance of inspecting gears.

Part B

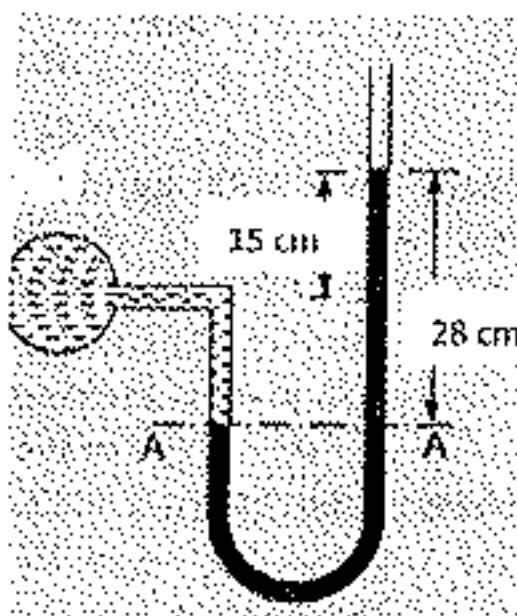
(2Q x 6 M= 12 Marks)

3. Briefly explain the working principle of Bourdon-Tube with help of neat sketch.
4. Explain the following spur gear terminologies:  
(a) Pitch circle (b) Clearance (c) Pressure angle

Part C

(1Q x 10 M= 10 Marks)

5. The right limb of a simple U-tube manometer containing mercury is open to the atmosphere while the left limb is connected to a pipe in which a fluid of specific gravity 0.9 is flowing. The centre of the pipe is 15 cm below the level of mercury in the right limb as shown in the Figure. Find the pressure of fluid in the pipe if the difference of mercury level in the two limbs is 28 cm. Take specific gravity of mercury is 13.6.





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**Set A**

**TEST 2**

II Semester 2016-2017

Course: **ME A 210 Engineering Metrology and  
Measurement**

24 March 2017

**Instructions:**

- i. Write legibly and to the point
- ii. Support your answers by neat sketches wherever necessary

**Part A**

(3 Q x 3M= 9 Marks)

1. List any three geometrical measurements which will ensure that a part produced meets the requirements of assembly
2. Explain the commonly used surface plates in workshops with their specifications.
3. "Surface texture of a spare part produced on a lathe machine is a function of many factors" Justify the statement enlisting the factors involved.

**Part B**

(2 Q x 6 M= 12 Marks)

4. Explain all the terms used in defining the surface texture of a finished spare part, with the help of a neat sketch
5. Explain Taylor Hobson's Talysurf for surface finish measurement with the help of a neat sketch.

**Part C**

(1 Q x 9 M= 9 Marks)

6. Explain the parameters to be measured in a screw thread with the help of neat diagram. Also explain the methods used for measuring the parameters of a screw thread.



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**Set A**

**TEST 1**

II Semester 2016-2017

Course: **ME A 210 Engineering Metrology and  
Measurement**

25 February 2017

**Instructions:**

- i. Write legibly and to the point
- ii. Support your answers by neat sketches wherever necessary

**Part A**

(2 Q x 3 M + 1 Q x 4M = 10 Marks)

1. Define scientific, legal and industrial metrology with examples.
2. List any three instruments for linear measurements with their least counts
3. Explain primary, secondary and tertiary and working standards of measurements.

**Part B**

(2 Q x 6 M = 12 Marks)

3. Differentiate between line and end standards on any six aspects.
4. Explain interferometry technique of flatness measurement with suitable diagrams.

**Part C**

(1 Q x 8 M = 8 Marks)

5. Can dial gauge be used for ensuring correct geometry of work-pieces produced? Justify with application of dial gauges for at least two such applications. Draw block diagrams in support of the answer.