

Student name :-----

Student no:-----

Question 1:

12 Points

For a shaft and a hole system of (25 N7-h6)

Given

$D_1 = 24\text{mm}$ ,  $D_2 = 30\text{mm}$

$i = 0.45 * \sqrt[3]{D} + 0.001 * D$  where  $D$  is in mm, and  $i$  is in  $\mu\text{m}$

The fundamental deviation of shaft n is ( $ei = +5D^{0.34}$ )

$IT_6 = 10 * i$

$IT_7 = 16 * i$

1. Calculate the following for both the shaft and the hole.

- Lower deviation
- Upper deviation
- Fundamental deviation
- Lower limit
- Upper limit
- Tolerance
- The minimum allowance
- The maximum allowance

2. Draw a sketch for the system above including the values you have calculated in 1.

Question 4:

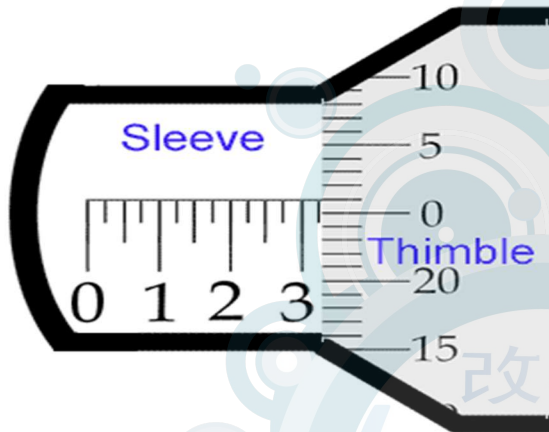
8 points

- a. List the minimum number of blocks to be wrung together to produce an angle of ( $51^{\circ} 42' 36''$ ) the following set of blocks.

degree	1	3	9	27	42
Minute	1	3	9	18	
second	3	12	18	30	

Show your calculations:

- b. The reading of the following micrometer is ----- . ( 2 points)



- c. Describe the working principle of the micrometer. (3 points).