

A student measuring the diameter of a pencil of circular cross-section with the help of a vernier scale records the following four readings 5.50 mm, 5.55 mm, 5.45 mm, 5.65 mm. The average of these four reading is 5.5375 mm and the standard deviation of the data is 0.07395 mm. The average diameter of the pencil should therefore be recorded as :

**[Main Sep. 06, 2020 (II)]**

- (a)  $(5.5375 \pm 0.0739)$  mm      (b)  $(5.5375 \pm 0.0740)$  mm  
(c)  $(5.538 \pm 0.074)$  mm      (d)  $(5.54 \pm 0.07)$  mm

**(d)** Average diameter,  $d_{av} = 5.5375$  mm

Deviation of data,  $\Delta d = 0.07395$  mm

As the measured data are upto two digits after decimal, therefore answer should be in two digits after decimal.

$$\therefore d = (5.54 \pm 0.07) \text{ mm}$$