

42. The current 'I' through a resistor is measured with a digital ammeter to be 0.10A. The uncertainty in the calculated value of  $I^2$  will be :

- (a) 1%
- (b) 2%
- (c) 5%
- (d) 20%

Soln:  $2 \left( \frac{\Delta I}{I} \right) \times 100$

[Since  $\Delta I$  for a digital ammeter = 0.01A]

$\therefore \left( \frac{2 \times 0.01}{0.10} \right) \times 100$

$= \frac{2 \times 0.01}{10^{-1} \times 10^{-2}} \times 100 = \frac{2 \times 0.01 \times 10^2 \times 10^2}{10}$

Correct  
option = D

$= 0.02 \times 1000$

$= 20\%$