Past Year JEE Questions

Questions

Quetion: 01

The positive integer just greater than $(1 + 0.0001)^{10000}$ is
A. 4
B. 5
C. 2
D. 3

Solutions

Solution: 01

Explanation

$(1 + 0.0001)^{10000} = \left(1 + \frac{1}{10^4}\right)^{10000}$

$= 1 + 10000 \times \frac{1}{10^4} + \frac{10000(9999)}{2!} \times \left(\frac{1}{10^4}\right)^2 + \ldots \ldots \infty$

$< 1 + 1 + \frac{1}{2!} + \frac{1}{3!} + \ldots \ldots \infty = e = 2.71828 < 3$