

**Answer on Question#38079 – Math - Other**

Let  $r$  be the page fault rate,  $t$  be the page fault service time,  $\tau$  be the memory access time.

Then the effective memory access time:

$$M = r \cdot t + (1 - r) \cdot \tau = \frac{1}{10^6} \cdot 10 \cdot 10^{-3} \cdot 10^9 \text{ ns} + \left(1 - \frac{1}{10^6}\right) \cdot 20 \text{ ns} \approx 10 \text{ ns} + 20 \text{ ns} = 30 \text{ ns}$$

**Answer:** (C) 30 ns.