$T_{avg\,rotation} = \frac{1}{2} \times \frac{1}{10{,}000RPM} \times \frac{60secs}{1min} \times \frac{1{,}000ms}{1sec} = 3ms$

$T_{avg\,transfer} = \frac{1}{10{,}000RPM} \times \frac{1track}{1{,}000sectors} \times \frac{60secs}{1min} \times \frac{1{,}000ms}{1sec} = 0.006$

$T_{access} = T_{avg\,seek} + T_{avg\,rotation} + T_{avg\,transfer}$
$= 5ms + 3ms + 0.006ms = 8.006ms$
A 1MB file store in 512 bytes blocks need 2,048 blocks.

A. .
$T_{best\,case} = T_{avg\,seek} + T_{avg\,rotation} + 2048 \times T_{avg,transfer}$
$= 5ms + 3ms + 2048 \times 0.006ms = 5ms + 3ms + 12.288ms = 20.288ms$

B. .
$T_{random\,access} = 2048 \times (T_{avg\,seek} + T_{avg\,rotation} + T_{avg\,transfer})$
$= 2048 \times (5ms + 3ms + 0.006ms) = 2048 \times 8.006ms = 16,396.288ms$