Answer on Question #44800 – Math - Other

a hypothetical CPU 1 MIPS takes 4 clock cycles on the average for any instruction. the memory access time is 1 clock cycle for each word. what is the peak data transfer rate in cycle stealing mode?

a) 4 million words b) 2 million words c) 8 million words d)none

Solution.

Performance of the computer is

$$1\ MIPS = 10^6 \frac{instructions}{second} = 4 \cdot 10^6 \frac{\text{clock cycles}}{second}$$

Since the access time for 1 word requires 1 clock cycle, the maximum transfer rate is

$$4 \cdot 10^6 \frac{\text{words}}{second}$$

Answer: a) 4 million words