2021-2022-1《GPU并行编程》课堂测验

2021-12-09

姓名： 学号：

1. (2 points) Assume that a kernel is launched with 1000 thread blocks each of which has 512 threads. If a variable is declared as a shared memory variable, how many versions of the variable will be created through the lifetime of the execution of the kernel?
   1. 1
   2. 1,000
   3. 512
   4. 512,000
2. (2 points )For our tiled matrix-matrix multiplication kernel, if we use a 32X32 tile, what is the reduction of memory bandwidth usage for input matrices A and B?
   1. 1/8 of the original usage
   2. 1/16 of the original usage
   3. 1/32 of the original usage
   4. 1/64 of the original usage
3. (2 points)Is there any Control Divergence?

\_\_global\_\_ void do\_work(int i) {

int result = 0;

if (i < 5)

for (j = 0; j < blockIdx.x; j++)

result += j;

a[threadIdx.x] = result;

1. (4 points)The tiled matrix multiplication kernel using shared memory which was discussed int class. How Control Divergence Impact on loading tiles from Matrix M?

Assume 16x16 tiles and thread blocks, and square matrices of 105x105. You must present your detailed calculation.