PCAP_QUIZ_2 (Copy)

1. . Select the correct contents of an array F generated from the kernel output for the following OpenCL host code and kernel code snippets.

```
#define VECTOR_SIZE 16
.....
.....
char D[VECTOR_SIZE]="TODAYIAMWRITINGP";
char E[VECTOR_SIZE]="CAPSEMASSINGMENT";
char F[100];
size_t global_size = VECTOR_SIZE/2;
size_t local_size = 1;
clEnqueueNDRangeKernel(__,__, 1, NULL,
          &global_size, &local_size, 0, NULL, __);
.....
.....

__kernel void kernel(__global uchar *D,__global uchar *E,__global uchar *F)
{
   int gid = get_global_id(0);
   F[gid*2]=D[gid];
   F[gid*2+1]=E[gid];
} *
```

(0.5 Points)

- TCOADPASYEIMAAMS
- CTAOPDSAEYMIAASM
- TCDPYEAAWSINIMGN
- CTPDEYAASWNIMING

2. Which of the following statements is (are) false?

a) The execution of the individual thread is sequential in CUDA.
b) All the threads that are generated by a kernel launch are collectively called a thread block.
c) Uninitialized grid and block dimensions are to be set to 0. *
(0.5 Points)

- a and b
- b and c
- only b
- a and c

3. Which one of the following is the correct way to use the cudaMalloc( ) function to allocate an array of type double in the global memory to accommodate 3 elements, if the sizeof(double) is 8 bytes? *
(0.5 Points)

- double * d_x= (void **) cudaMalloc(&d_x, 24);
- double * d_x= (void **) cudaMalloc(&d_x, 3);
- double * d_x= (void **) cudaMalloc(d_x, 3);
- int s= cudaMalloc((void **) &d_x, 24);

4. Considering the following kernel launch, write the output of the following kernel function when N=3.

```
kFn <<< 2, 4 >>> (dev_A, N);
__global__ void kFn( int *a, int N )
{
unsigned int id = threadIdx.x;
if( id < N )
 printf("%d", id);
} *
```

(0.5 Points)

- 0 1 2 3 4 5 6 7
- 0 1 2 3 4 5

- 0 1 2 0 1 2
- 0 1 2 3 0 1 2 3

5. Select the odd one out with respect to a Context in OpenCL *
(0.5 Points)

- It Keeps track of the programs and kernels that are created for each device.
- It establishes a command queue between each pair of host and device.
- It coordinates the mechanisms for host-device interactions.
- It Manages the memory objects that are available to the devices

6. clFlush() is used to _____ *
(0.5 Points)

- block other command execution in the command queue
- block the execution until all the commands in the command queue have completed
- block the execution until all the commands in the command queue have been removed
- block other command queues until one command queue is executing

7. Which one of the following statements is true in the context of the programming model in OpenCL? *
(0.5 Points)

- It defines an abstract hardware model.
- It defines how the OpenCL environment is configured on the host and how kernels are executed on the device.
- It defines the abstract memory hierarchy that kernels use.
- It defines how the concurrency model is mapped to physical hardware.

8. Match the following w.r.t. OpenCL device memories.

1) constant memory	i) visible only to a compute unit
2) local memory	ii) read-write memory visible to all compute units
3) global memory	iii) visible only to a work-item of a work-group
4) private memory	iv) read-only memory visible to all compute units *

(0.5 Points)

- 1- i, 2-ii, 3-iv, 4-iii
- 1-iv, 2-i, 3-ii, 4-iii
- 1-ii, 2-i, 3-iii, 4-iv
- 1-iv, 2-ii, 3-iii, 4-i

9. Which one among the following API functions is used to determine which implementation (vendor) the platform was defined by? *
(0.5 Points)

- clGetPlatformIDs( )
- clGetDeviceInfo( )
- clGetPlatformInfo( )
- clGetDeviceInfo( )

10. Given the following statements choose the CORRECT option, with respect to CUDA programming.
i) A __global__ function executes on a CUDA device and can be called from another device or host function.
ii) The second execution configuration parameter in CUDA specifies the number of threads in each
thread block.
iii) For a given grid of threads, the total number of threads in the block is available in the blockIdx variable. *
(0.5 Points)

- i-F ,ii-T, iii-F
- i-T ,ii-F, iii-T

- i-T ,ii-T, iii-F
- i-F ,ii-T, iii-T