Quiz Questions for Module 2

1. If we want to allocate an array of v integer elements in CUDA device global memory, what would be an appropriate expression for the second argument of the cudaMalloc() call?
   (A) n
   (B) v
   (C) n * sizeof(int)
   (D) v * sizeof(int)

   Answer: (D)
   Explanation: This one should be self-evident.

2. If we want to allocate an array of n floating-point elements and have a floating-point pointer variable d_A to point to the allocated memory, what would be an appropriate expression for the first argument of the cudaMalloc() call?
   (A) n
   (B) (void *) d_A
   (C) *d_A
   (D) (void **) &d_A

   Answer: (D)

   Explanation: &d_A is pointer to a pointer of float. To convert it to a generic pointer required by cudaMalloc() should use (void **) to cast it to a generic double-level pointer.

3. If we want to copy 3000 bytes of data from host array h_A (h_A is a pointer to element 0 of the source array) to device array d_A (d_A is a pointer to element 0 of the destination array), what would be an appropriate API call for this in CUDA?
   (A) cudaMemcpy(3000, h_A, d_A, cudaMemcpyHostToDevice);
   (B) cudaMemcpy(h_A, d_A, 3000, cudaMemcpyDeviceTHost);
   (C) cudaMemcpy(d_A, h_A, 3000, cudaMemcpyHostToDevice);
   (D) cudaMemcpy(3000, d_A, h_A, cudaMemcpyHostToDevice);

   Answer: (C)

   Explanation: See Lecture 2.2 slides.

4. How would one declare a variable err that can appropriately receive returned value of a CUDA API call?

   (A) int err;

   (B) cudaError err;

   (C) cudaError_t err;

   (D) cudaSuccess_t err;

   Answer: (C)

   Explanation: See Lecture 2.2 slides.