3 Computer Design (tmj32)

(a) Describe each of the four models defined by OpenCL's specification.   [4 marks]

(b) Describe the different types of memory available to OpenCL kernels.   [4 marks]

(c) Contrast how calls to a kernel, e.g. DAXPY, are invoked and grouped for execution in OpenCL compared with CUDA.   [4 marks]

(d) Describe, with the aid of a diagram, how a GPU executes data-parallel kernels efficiently, including the two main pieces of hardware support.   [4 marks]

(e) Describe the trade-offs between using a GPU or a specialised accelerator for tasks containing data-level parallelism.   [4 marks]