

**ECE571: Advanced Microprocessor Design – Homework 10**  
Fall 2019

**Due: Thursday 21 November 2019, 2:00pm**

Create a document that contains the answers to the questions below. A .pdf or .txt file is preferred but I can accept MS Office or Libreoffice format if necessary.

1. Read the website article:

**Examining Intel’s Ice Lake Processors: Taking a Bite of the Sunny Cove Microarchitecture** by Ian Cutress (note that there are 12 pages to this article).

<https://www.anandtech.com/show/14514/examining-intels-ice-lake-microarchitecture-and-sunny-cove>

I apologize for the obnoxious ads while reading. Pressing “print this article” and reading that might help make it a bit more readable.

2. Answer the following questions:

- (a) What types of DRAM are supported by the new CPUs?
- (b) Will this be the first Intel chips to ship at 10nm?
- (c) What IPC speedup is found in this new chip vs Skylake?

3. Also find and read the article:

**Arm’s New Cortex-A77 CPU Micro-architecture: Evolving Performance** by Andrei Frumusanu (note that there are 4 pages to this article).

<https://www.anandtech.com/show/14384/arm-announces-cortexa77-cpu-ip>

4. Answer the following questions:

- (a) The article says ARM Cortex chips are striving for best possible PPA results. What is PPA?
- (b) The branch predictor can fetch more instructions faster than the decoder can handle. Why do they do that?

5. **Submitting your work.**

- Create the document containing the answers to the questions asked.
- Please make sure your name appears in the document.
- e-mail the file to me by the homework deadline.