Assignment 6

Due on 2019-9-11, 23:59 IST.

1. Match the following in the best manner from the list below:
   - A. Write the name of the instruction type that does not use the cache.
   - B. Write the name of the instruction type that uses the cache.
   - C. Write the name of the instruction type that does not know about the cache.
   - D. Write the name of the instruction type that knows about the cache.
   - E. Write the name of the instruction type that does not need to access the cache.
   - F. Write the name of the instruction type that needs to access the cache.

   1. Load
   2. Store
   3. Compute
   4. Transfer
   5. Branch
   6. Jump

   - A: D, F
   - B: C, E
   - C: A, B
   - D: C, E
   - E: A, B
   - F: D, E

2. A character cache size of 32 bytes is 256 bytes and the word length of the processor is 32 bits. During a cache miss, a block is loaded into the cache and placed at the end of the cache. Which is the average memory access time if 32 bytes are accessed sequentially?

   - A: 16 clocks
   - B: 19 clocks
   - C: 23 clocks
   - D: 26 clocks
   - E: 29 clocks

   - B: 19 clocks

3. A character cache size of 256 bytes and the word length of the processor is 32 bits. The cache is not active. Which of the following is true about the cache?

   - A: It can still hold 256 bytes of data.
   - B: It can still hold 256 words of data.
   - C: It can still hold 256 bytes of data and 256 words of data.
   - D: It can still hold 256 bytes of data and 256 words of data.
   - E: It can still hold 256 bytes of data and 256 words of data.

   - A: It can still hold 256 bytes of data.

4. Which of the following is true about the cache?

   - A: It can store 256 bytes of data in 32 words.
   - B: It can store 256 words of data in 32 bytes.
   - C: It can store 256 bytes of data in 32 bytes.
   - D: It can store 256 words of data in 32 bytes.
   - E: It can store 256 bytes of data in 32 words.

   - A: It can store 256 bytes of data in 32 words.

5. Which of the following is true about the cache?

   - A: It can store 256 bytes of data in 32 words.
   - B: It can store 256 words of data in 32 bytes.
   - C: It can store 256 bytes of data in 32 bytes.
   - D: It can store 256 words of data in 32 bytes.
   - E: It can store 256 bytes of data in 32 words.

   - A: It can store 256 bytes of data in 32 words.

6. Which of the following is true about the cache?

   - A: It can store 256 bytes of data in 32 words.
   - B: It can store 256 words of data in 32 bytes.
   - C: It can store 256 bytes of data in 32 bytes.
   - D: It can store 256 words of data in 32 bytes.
   - E: It can store 256 bytes of data in 32 words.

   - A: It can store 256 bytes of data in 32 words.

7. Which of the following is true about the cache?

   - A: It can store 256 bytes of data in 32 words.
   - B: It can store 256 words of data in 32 bytes.
   - C: It can store 256 bytes of data in 32 bytes.
   - D: It can store 256 words of data in 32 bytes.
   - E: It can store 256 bytes of data in 32 words.

   - A: It can store 256 bytes of data in 32 words.

Using the above configuration, change the cache type to D (direct-mapped) and press the pressed-referenced to as OP. D: detailed. (Forwarded processed referenced to as OP.

8. Which of the following is true about the cache?

   - A: It can store 256 bytes of data in 32 words.
   - B: It can store 256 words of data in 32 bytes.
   - C: It can store 256 bytes of data in 32 bytes.
   - D: It can store 256 words of data in 32 bytes.
   - E: It can store 256 bytes of data in 32 words.

   - A: It can store 256 bytes of data in 32 words.

9. Which of the following is true about the cache?

   - A: It can store 256 bytes of data in 32 words.
   - B: It can store 256 words of data in 32 bytes.
   - C: It can store 256 bytes of data in 32 bytes.
   - D: It can store 256 words of data in 32 bytes.
   - E: It can store 256 bytes of data in 32 words.

   - A: It can store 256 bytes of data in 32 words.