**CR1350 Assignment #3**

**Due:** July 26th before 11:59PM.

**IMPORTANT:** The Dropbox will close at 12AM and no assignments will be accepted after that!

Answer all questions on the document!

DO NOT CREATE YOUR OWN! Marks will be lost!

Question 1: Data Width and Range

1. Explain the relationship between the width of a location and the range of data that can be stored in a location.

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Question 2: Functions of Memory Types

1. State the function of the following types of memory:
   * Registers

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* + Cache

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* + Main Memory

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* + Secondary Storage

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* + Off-line Storage

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Question 3: Static RAM vs. Dynamic RAM

1. Describe the similarities and differences between static RAM and dynamic RAM.

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Question 4: Magnetic Disk Organization

1. Discuss the organization of a magnetic disk in terms of cylinders, tracks, and sectors.

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Question 5: Disk Access Characteristics

1. Define and discuss the factors that determine the access characteristics of a disk.

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Question 6: RAID Levels

1. Briefly discuss the operation and layout of RAID0, RAID1, and RAID5.

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Question 7: Characteristics of SSDs

1. Discuss the characteristics of Solid State Drives (SSD).

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Question 8: Optical Disk Technologies

1. Briefly describe the characteristics of optical disk technologies.

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Question 9: Magnetic Tape Memory

1. Discuss the characteristics and operation of magnetic tape memory.

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Question 10: SAN and NAS

1. Describe the characteristics and operation of a Storage Area Network (SAN) and Network Attached Storage (NAS).

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