CMSC 221: Data Structures
Quiz #0

Name: ______________  Key _____________

1. One fundamental storage structure, a(n) ______ Array ______, stores elements next to each other in memory. Doing this or accessing elements next to each other in memory are examples of the phenomena of ______ Locality ______. This is the major motivation to incorporating ______ Cache ______ into our computer architecture, i.e., this component improves program performance if the phenomena occurs.

2. True or (False) (Circle one): In Java, a programmer can “turn-off,” or stop a class’s inheritance from Object.

3. Generic programming is a paradigm by which programmatic elements are created to work with many types — put another way, a programmer writes programs in terms of types to-be-specified later. In Java, we use ______ Generics ______ and/or ______ Polymorphism ______ to do this.

4. One fundamental storage technique, a(n) ______ Linked structure ______, encodes adjacency using pointers. If only next adjacency is stored, the structure is a(n) ______ Singly linked list ______. A special case of these, ______ Circularly linked lists ______, occurs when the first and last elements are marked adjacent.

5. Bonus. A sentinel is an important component in implementing data structures. What is a sentinel?

________ Special demarkating nodes in a linked structure that do not store elements but greatly aid in simplifying its implementation.