ITSE 2417 (DL)- Fall 2016
Quiz 4- Chapters 20, 21, 27-30, 32 & Notes
Total Points: 40

Due: Tuesday December 13th @ 11:59PM. Look at Syllabus/ICR on late work.

Directions: For Questions 1-20, clearly mark answers on a separate word (or notepad) document. See sample file/directions provided by your professor and submit to the appropriate location on the MyTCC (BlackBoard) site.

– Assume all variables are properly declared- unless otherwise mentioned.

Multiple Choice. Mark the one best answer for each question. **(2 pts. each)**

1. What Java component controls the execution of threads?
   A. thread scheduler
   B. execution scheduler
   C. task controller
   D. run scheduler

2. Which of the following interfaces can be used to create a thread?
   A. `Thread`
   B. `Runnable`
   C. `Scheduler`
   D. `Task`

3. Which of the following is not one of the valid states of a thread?
   A. New
   B. Runnable
   C. Running
   D. Blocked

4. Which of the following shows the proper position of the `synchronized` keyword in a class declaration?
   A. `public int synchronized calculate(int x)`
   B. `public synchronized int calculate(int x)`
   C. `public int calculate(synchronized int x)`
   D. `public int calculate(int x) synchronized`

5. What does the following SQL statement add to the `Terms` table?

```
INSERT INTO Terms (TermsDueDays)
    VALUES ('90')
```

   A. A record with a value of 90 for the `TermsDueDays` field
   B. 90 records with a field of `TermsDueDays`
   C. All records where the `TermsDueDays` field has a value of 90
   D. A `TermsDueDays` field with a default value of 90

6. Which of the following statements moves the cursor to the second row of the `dueInvoices` result set created in the code below?

```
Statement statement = connection.createStatement();
String query = "SELECT InvoiceDate, InvoiceTotal "
             + "FROM Invoices "
             + "WHERE InvoiceTotal > = 0 "
             + "ORDER BY InvoiceDate ASC";
ResultSet dueInvoices = statement.executeQuery(query);
```

A. `dueInvoices.next();`
B. `dueInvoices.absolute(1);`
C. `dueInvoices.absolute(2);`
D. `dueInvoices.relative(-2);`

7. Which of the following `TreeSet` instantiations would create a `TreeSet` that could store `doubles`?
   A. `TreeSet<Double> set = new TreeSet<Double>();`
   B. `TreeSet<Integer> set = new TreeSet<Integer>();`
   C. `TreeSet<String> set = new TreeSet<String>();`
   D. `TreeSet<Boolean> set = new TreeSet<Boolean>();`

8. Which of the following adds and removes items according to LIFO rules?
   A. stack
   B. queue
   C. priority queue
   D. binary tree

9. In hashing, the data is organized with the help of a table, called the ____.
   A. key table
   B. index table
   C. hash table
   D. relative table

10. In ____, the data is stored within the hash table.
    A. closed addressing
    B. open addressing
    C. inverted addressing
    D. converted addressing

11. The depth first traversal is similar to the ____ traversal of a binary tree.
    A. postorder
    B. preorder
    C. inorder
    D. level by level

12. Suppose your program frequently tests whether a student is in a soccer team and also need to know the student's information such as phone number, address, and age, what is the best data structure to store the students in a soccer team?
    A. `ArrayList`
    B. `HashMap`
    C. `TreeMap`
    D. `LinkedList`

13. Which of the data types below does not allow duplicates?
    A. `Set`
    B. `List`
    C. `Stack`
    D. `LinkedList`

14. Analyze the following code:

```
public class Test implements Runnable {
  public static void main(String[] args) {
    Thread t = new Thread(this);
    t.start();
  }

  public void run() {
    System.out.println("test");
  }
}
```

A. The program does not compile because this cannot be referenced in a static method.
B. The program compiles and runs fine and displays test on the console.
C. The program compiles fine, but it does not print anything because t does not invoke the `run()` method.
D. None of the above.

15. Suppose a graph is created in the following code. What is the output of the following code?

```
 String[] vertices = {"Atlanta", "Dallas", "Chicago", "New York",
"Seattle"};

    int[][] edges = {
      {0, 1}, {0, 2},
      {1, 0}, {1, 2}, {1, 3}, {1, 4},
      {2, 0}, {2, 1}, {2, 3},
      {3, 1}, {3, 2}, {3, 4},
      {4, 1}, {4, 3}
    };

    Graph<String> graph1 = new UnweightedGraph<>(vertices, edges);
    System.out.println("The index of vertex Chicago is: "
      + graph1.getIndex("Chicago"));
```

A. 1
B. 2
C. 3
D. 5

16. What is the printout of the following code?

```
    List<String> list = new ArrayList<>();

      list.add("A");
      list.add("B");
      list.add("C");
      list.add("D");

      for (int i = 0; i < list.size(); i++)
          System.out.print(list.remove(i));
```

A. `ABCD`
B. `AB`
C. `AC`
D. `ABC`

17. Which of the following statements are true?

a. All the methods in `HashSet` are inherited from the `Collection` interface.
b. All the methods in `TreeSet` are inherited from the `Collection` interface.
c. All the methods in `LinkedHashSet` are inherited from the `Collection` interface.
d. All the methods in `Set` are inherited from the `Collection` interface.
e. All the concrete classes of `Collection` have at least two constructors. One is the no-arg constructor that constructs an empty collection. The other constructs instances from a collection.

A. All the methods in `HashSet` are inherited from the `Collection` interface.
B. All the methods in `Set` are inherited from the `Collection` interface.
C. All the methods in `LinkedHashSet` are inherited from the `Collection` interface.
D. All of the above

18. Classes and interfaces for the JDBC API can be found in which package?

A. `java.jdbc.`
B. `javax.jdbc.`
C. `java.sql.`
D. `java.sql.jdbc.`

19. What is wrong with the following statement?

```
boolean result = statement.execute("SELECT * from emp WHERE empNum = '?'");
```

A. boolean should be `ResultSet`
B. `execute` should be `executeQuery`
C. `execute` should be `prepareStatement`
D. `?` should be an integer

20. Complete the following code, which is intended to print out all key/value pairs in a map named `myMap` that contains `String` data for student IDs and names:

```
Map<String, String> myMap = new HashMap<String, String>();
. . .

Set<String> mapKeySet = myMap.keySet();
for (String aKey : mapKeySet)
{
   _______________________________;
   System.out.println("ID: " + aKey + "->" + name);
}
```

A. `String name = myMap.get(aKey);`
B. `String name = myMap.next(aKey);`
C. `String name = MapKeySet.get(aKey);`
D. `String name = MapKeySet.next(aKey);`

Extra Credit: Implement the following program. Follows same program guidelines and graded on the same scale as program sets. Partial credit given. (**10 points)**

Write an Android Application with the Android ADT bundle and Eclipse.

- http://developer.android.com/sdk/index.html

You will write a Hello World Application following the directions (Steps 1-3) found at the following web site.

- http://www3.ntu.edu.sg/home/ehchua/programming/android/Android_HowTo.html

Write the android app using by writing Java code (Section 3.2). Include the entire folder named below in your submission.

Name the application: `AndroidAppXX`, where `XX` are your initials.