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ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
Department of Computer Science and Engineering (CSE)

SEMESTER FINAL EXAMINATION   **SUMMER SEMESTER, 2011-2012**
DURATION: 3 Hours   **FULL MARKS: 100**

CSE 4401: Visual Programming

Programmable calculators are not allowed. Do not write anything on the question paper.
There are **8 (eight)** questions. Answer any **6 (six)** of them.
Figures in the right margin indicate marks.

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1. a) What does it mean by 'a method or class is abstract'? What is the similarity between Abstract class and Interface.   5

   b)
```
public class Student {
//All veriables here

    public void getStudentID(String id) {}
    public void getStudentAddress(String id) {}
    public static void addCoursetoStudentProfile(String id) {}
    public static void DeleteStudent(String id) {
    }
}


public class InternationlStudents extends Student {

    public static void getStudentID(String id) {}
    public void getStudentAddress(String id) {}
    public void addCoursetoStudentProfile(String id) {}
    public static void DeleteStudent(String id) {}
}
```
   8

       i.   Which method overrides a method in the superclass? Why.

       ii. Which method hides a method in the superclass? Why.

       iii. What do the other methods do? Why.

   c) Explain with example, why Java does not support multiple inheritances?   3.66

2. a) Explain different ways of using thread? Explain which is better.   4+4
   b) What are the differences between the methods sleep() and wait() ?   4.66
   c) What are Wrapper Classes? Describe the Wrapper classes in Java.   4

3. a) What is the way to create a user defined Exception?   4
   b) What are Checked and Unchecked Exceptions?   4
   c) What is the Collections API? What is the difference between Iterator and ListIterator?   2+2
   d) Suppose you have developed a program by using a Map container to hold key/value pairs. You wanted to make a change to the map. You decided to make a clone of the map in order to save the original data on side. Will it work ? Explain your answer.   4.66

4. a) Why NullPoiterException occurs? How to handle this exception?   5

    b) What is mutable object and immutable object?   4.66

    c) What is Stream and what are the types of Streams and classes of the Streams? What is the   5+2
    difference between the Reader/Writer class hierarchy and the InputStream/OutputStream
    class hierarchy?

5. a) What is the difference between Swing and AWT components?   5

    b) Does Swing is thread safe? What do you mean by swing is not thread-safe?   5.66

    c) Write down the code for creating a Jframe with a JTextField and a JButton. When the   6
    JButton is clicked, save the content of the JTextField into a file.

6. a) What is the Model-view-Controller(MVC) paradigm and why is it important to software   6
    development? Briefly describe the function of each of the MVC units.

    b) Discuss the request processing workflow in Spring Web MVC (high level).   6

    c) Discuss the purpose of following annotation in case of Spring MVC framework   4.66
        i.   @requestmapping
        ii. @ModelAttribute

7. a) What is Socket ? Describe the steps that occur when establishing a TCP connection between   8
    two computers using sockets.

    b) What is the main difference between ServerSocket and Socket? Write down the constructors   4
    to create ServerSocket and Socket.

    c) How can you fetch files in Java using HTTP?   4.66

8. a) Explain the basic steps in Java to connect with a database and get query results.   6

    b) Write down the difference between Statement and Prepared Statement. Give example of how   5.66
    can we use each of them.

    c) Why the following code is not an optimized code? Can you optimize it.   5

```
String [] queries = {
    "insert into employee (name) values ('A')",
    "insert into employee (name) values ('B')",
    "insert into employee (name) values ('C')",
};

Connection connection = new getConnection();
Statement statement = connection.createStatement();

for (String query : queries) {
    statement.execute(query);
}
statement.close();
connection.close();
```