

Part 1: Theory (4 points)

Problem 1. Choose the correct answer (2 points):

What output is printed by the following statement?

Question 1.

```
System.out.println(6 > 9 - 2 & 6 % 0 == 6);
```

- A. True
- B. False
- C. Error

Question 2.

```
System.out.println(5.0 / 2 - 2 / 5);
```

- A. Error
- B. 2.5
- C. 2.1
- D. 2

Question 3.

```
System.out.println("B" + 8 + 4);
```

- A. B84
- B. Error
- C. B12
- D. 78

Question 4.

System.out.println('B' + 8 + 4);

- A. B84
- B. Error
- C. B12
- D. 78

Problem 2. Short answer (2 points)

Question 5. What output is printed by the following statement ? Explain it.

```
class MyNumber{
    public int Mystery(int num1, int num2) {
        num1 = Unknown(num1, num2);
        num2 = Unknown(num2, num1);
        return (num2);
    }

    public int Unknown(int num1, int num2) {
        int num3 = num1 + num2;
        num2 += num3 * 2;
        return (num2);
    }
}

public class Mystery {
    public static void main(String[] args) {
        MyNumber myNumber = new MyNumber();

        int num1 = 2;
        int num2 = 7;
        System.out.println("The 1st number is: " +
            myNumber.Mystery(num1, 6));
        System.out.println("The 2nd number is: " +
            myNumber.Mystery(num2 % 5, 1 + num1 * 2));
    }
}
```

Write your answer here:

[illegible]

Question 6.

- How can we create a Thread in Java?
- How can we pause the execution of a Thread for specific time?

Write your answer here:

[illegible]

Part II. Practice (6 points)

General guideline:

For each file of your source code, please include the following lines:

```
/* Full name   : .....  
   Student ID  : .....  
   Class       : 17CLC-KTPM  
*/
```

Given a file named `travel.txt` containing the following information as sample input:

```
hanoi-danang:plane:2  
danang-hochiminh:train:12  
hue-danang:bus:2  
danang-nhatrang:train:10  
nhatrang-hochiminh:plane:1
```

For each line of the input file:

```
from city - destination city:transport: number of hours estimated
```

Please notice that there is no space between fields in each line.

1. Create a class `Transport` storing information of each line. Override the `toString()` method that displays information stored in each object. **Note:** You should use private attributes and getter and setter for these attributes.
2. Create a class `Transports` that processes input file, create and store `Transport` objects, search a route from one starting city to a destination city.
3. Create a Swing GUI application that displays information stored in the file `travel.txt`. This application allows user to enter two different cities and to display a route connecting these two cities.
Note: You should invoke methods defined in the classes `Transport` and `Transports`.

The sample output screens will be shown in the next page.

My travel		My travel	
<div>File</div> <div> <div>Load file ⌘O</div> <div>g within 2.0 hours by plane.</div> <div>hinh within 12.0 hours by train.</div> <div>Close ⌘Q</div> <div>within 2.0 hours by bus.</div> <div>From danang to nhatrang within 10.0 hours by train.</div> <div>From nhatrang to hochiminh within 1.0 hour by plane.</div> </div>		<div>File</div> <div> <div>From hanoi to danang within 2.0 hours by plane.</div> <div>From danang to hochiminh within 12.0 hours by train.</div> <div>From hue to danang within 2.0 hours by bus.</div> <div>From danang to nhatrang within 10.0 hours by train.</div> <div>From nhatrang to hochiminh within 1.0 hour by plane.</div> </div>	
From	<input type="text"/>	From	<input type="text" value="hanoi"/>
To	<input type="text"/>	To	<input type="text" value="hochiminh"/>
<div>Search</div> <div>Clear</div>		<div>Search</div> <div>Clear</div>	
Result		Result	<div>From hanoi to danang within 2.0 hours by plane</div> <div>From danang to hochiminh within 12.0 hours by train</div>

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