EECS1021 Winter 2019 Name: (Last, First) OOP: From Sensors to Actuator **Example Exam Solution** Time Limit: 20 minutes Student ID 1. Assume that a Person class is already defined, and it has an attribute name and a constructor that initializes the person's name from the input string. Consider the following fragment of Java code (inside some main method): Person p1 = new Person("Heeyeon"); Person p2 = new Person("Jiyoon"); System.out.println(p1 != p2); What happens when executing the above Java code? A. The above Java code does not compile. B. A NullPointerException occurs. C. An ArrayIndexOutOfBoundsException occurs. D. One line output to the console: true E. One line output to the console: false F. None of the above. 2. Assume that a Person class is already defined, and it has an attribute name and a constructor that initializes the person's name from the input string. Consider the following fragment of Java code (inside some main method): Person p1 = new Person("Heeyeon"); 2 Person p2 = new Person("Jiyoon"); 3 Person[] persons = new Person[2]; System.out.println(persons[persons.length()] != null); What happens when executing the above Java code? A. The above Java code does not compile. B. A NullPointerException occurs. C. An ArrayIndexOutOfBoundsException occurs. D. One line output to the console: true

F. None of the above.

false

E. One line output to the console:

3. Assume that a **Person** class is already defined, and it has an attribute **name** and a constructor that initializes the person's name from the input string. Consider the following fragment of Java code (inside some **main** method):

```
Person p1 = new Person("Heeyeon");
Person p2 = new Person("Jiyoon");
Person[] persons = new Person[2];
System.out.println(persons[persons.length] != null);
```

What happens when executing the above Java code?

- A. The above Java code does not compile.
- B. A NullPointerException occurs.
- C. An ArrayIndexOutOfBoundsException occurs.
- D. One line output to the console:

```
true
```

E. One line output to the console:

```
false
```

- F. None of the above.
- 4. Assume that a **Person** class is already defined, and it has an attribute **name** and a constructor that initializes the person's name from the input string. Consider the following fragment of Java code (inside some **main** method):

```
Person p1 = new Person("Heeyeon");
Person p2 = new Person("Jiyoon");
Person[] persons = new Person[2];
System.out.println(persons[persons.length - 1] != null);
```

What happens when executing the above Java code?

- A. The above Java code does not compile.
- B. A NullPointerException occurs.
- C. An ArrayIndexOutOfBoundsException occurs.
- D. One line output to the console:

```
true
```

E. One line output to the console:

```
false
```

F. None of the above.

5. Assume that a **Person** class is already defined, and it has an attribute **name** and a constructor that initializes the person's name from the input string. Consider the following fragment of Java code (inside some **main** method):

```
Person p1 = new Person("Heeyeon");
Person p2 = new Person("Jiyoon");
Person[] persons = new Person[2];
System.out.println(persons[persons.length - 1].name.equals("Jiyoon"));
```

What happens when executing the above Java code?

- A. The above Java code does not compile.
- B. A NullPointerException occurs.
- C. An ArrayIndexOutOfBoundsException occurs.
- D. One line output to the console:

```
true
```

E. One line output to the console:

```
false
```

- F. None of the above.
- 6. Assume that a **Person** class is already defined, and it has an attribute **name** and a constructor that initializes the person's name from the input string. Consider the following fragment of Java code (inside some **main** method):

```
Person p1 = new Person("Heeyeon");
Person p2 = new Person("Jiyoon");
Person[] persons = {p1, p2};
p1 = p2;
System.out.println(persons[0] == p1);
```

What happens when executing the above Java code?

- A. The above Java code does not compile.
- B. A NullPointerException occurs.
- C. An ArrayIndexOutOfBoundsException occurs.
- D. One line output to the console:

```
true
```

E. One line output to the console:

```
false
```

F. None of the above.

7. Assume that a **Person** class is already defined, and it has an attribute **name** and a constructor that initializes the person's name from the input string. Consider the following fragment of Java code (inside some **main** method):

```
Person p1 = new Person("Heeyeon");
Person p2 = new Person("Jiyoon");
Person[] persons = {p1, p2};
p1 = p2;
persons[0] = p2;
System.out.println(persons[0] == p1);
```

What happens when executing the above Java code?

- A. The above Java code does not compile.
- B. A NullPointerException occurs.
- C. An ArrayIndexOutOfBoundsException occurs.
- D. One line output to the console:

```
true
```

E. One line output to the console:

false

- F. None of the above.
- 8. Assume that a **Person** class is already defined, and it has an attribute **name**, a constructor that initializes the person's name from the input string, and a mutator method **setName** that changes the person's name from the input string. Consider the following fragment of Java code (inside some **main** method):

```
Person p1 = new Person("Heeyeon");
Person p2 = new Person("Jiyoon");

Person[] persons = {p1, p2};
p1 = persons[1];
persons[0] = p2;
p2.setName("Jihye");
System.out.println(p1.name);
```

What happens when executing the above Java code?

- A. The above Java code does not compile.
- B. A NullPointerException occurs.
- C. An ArrayIndexOutOfBoundsException occurs.
- D. One line output to the console:

```
Heeyeon
```

E. One line output to the console:

```
Jiyoon
```

F. One line output to the console:

```
Jihye
```

G. None of the above.