

National University of Computer and Emerging Sciences, Lahore Campus

Course: Advanced Programming
Program: BS(Computer Science)
Duration: 60 Minutes
Paper Date: 03-Oct-18
Section: ALL
Exam: Mid-I

Course Code: CS433
Semester: Fall 2018
Total Marks: 23
Weight: 15 %
Page(s): 6

Instruction/Notes: Attempt the examination on the question paper and write concise answers. You can use extra sheet for rough work. Do not attach extra sheets used for rough with the question paper. Don't fill the table titled Questions/Marks.

Question	Objective	1	2	3	4	Total
Marks	/ 9	/ 3	/ 2	/ 4	/ 5	/ 23

Section 1 (Objective part) [points 9]

Clearly circle the correct options.

Q1. Method Overriding is an example of?

(A) static binding (B) dynamic binding (C) runtime polymorphism (D) compile-time polymorphism

Q2. Suppose a BaseClass has variables with different access modifiers (default, public, protected and private). If SubClass is in different package as BaseClass, which variables of the BaseClass will be accessible in the SubClass?

(A) public only (B) private, public, default (C) public, protected (D) public, default, protected

Q3. What will be the output?

```
class MyClass {
    int i = 0;
    public MyClass() {
        i = i+2;
    }
    public static void main(String args[]) {
        MyClass obj = new MyClass();
        System.out.print("The value of i is "+ this.i);
    }
}
```

Ans:

Q4. What is the output of the following program?

<pre>class Test { public static void main(String args[]) { int i; System.out.println(i); } }</pre>	<p>A. A value of 0 will be printed out.</p> <p>B. Nothing will be printed out.</p> <p>C. A compile time error.</p> <p>D. None of the above.</p>
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Q5. The code below gives the error. Explain the reason for error and also specify if it is compile time error or runtime error.

<pre>interface AirCond { public default void off() { System.out.println("Going to switch off"); } void on(); } class House implements AirCond { void on() { System.out.println("Going to switch on"); } public static void main(String args[]) { Y obj = new Y(); obj.methodX(); } }</pre>

Ans:

Q6. Encircle the true statement(s).

- (A) An interface cannot extend a class. (B) An interface cannot extend multiple interfaces.
- (C) A class cannot partially implement an interface. (D) You can create references of interface type.

Q7. What will be the output of the following program?

```
class Catch {  
    public static void main(String args[]) {  
        try {  
            int x = 0;  
            int e = 11 / x;  
        } catch(Exception e) {  
            System.out.println("Gotcha.");  
        } catch(ArithmeticException e) {  
            System.out.println("Caught.");  
        }  
    }  
}
```

Ans:

Q8. What will be the value of c?

```
String str1 = "message";
```

```
char c = str1.charAt(7);
```

(A) e (B) null (C) runtime error (D) compile time error

Q9. What is the output of the following program?

```
public class Test  
{  
    public static void main(String args[])  
    {  
        String str = null;  
        if(str.length() == 0) {  
            System.out.println("1");  
        } else if(str.length() == null) {  
            System.out.println("2");  
        } else {  
            System.out.println("3");  
        }  
    }  
}
```

Ans:

Section 2 (Subjective part) (marks 15)**Question No. 1 [3 Marks]**

What is difference between String, StringBuffer and StringBuilder class? When to use what?

Solution:

Question No. 2 [2 Marks] Given the following two java classes in two separate files, write the answers for the two parts (a & b) given below:

```
import examples.A;
package examples;

public class A {
    int a;
    protected int j;

    void print() {
    }
    private void calculate() {
    }
    protected void execute() {
    }
}
```

```
package samples;

class B extends A {
    private int i;
    private void print() { }

    public static void main(String args[]){
        B obj = new B();
    }
}
```

- (A) Fix the compile time errors in the code. (Don't try to change the name of the packages of these two classes)
- (B) Which of the data members and methods will be accessible by an object of B?

Ans:

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- b) Keeping in mind the concepts of an Abstract class and an Interface, correct the following programs. (4 marks)

<pre>public class Animal { boolean legs; public abstract void sound(); public void method2 () { } }</pre>	<pre>public interface NonFlying { void movement(); void getName() { }; }</pre>
<pre>public class Cat extends Animal, Thread{ // here Thread is also a class String name; public void sound(){ System.out.println("Meow"); } }</pre>	<pre>public class Cat implements NonFlying { }</pre>

Solution: