



### TEST

1. What will be the output of the following C++ application?

```
#include <iostream>
using namespace std;

class String
{
private:
    int length;
    char* ps;
public:
    String();
    String(const char*);
    ~String();

    const String& operator= (String&);
    const String& operator+(const String&);

    char* getString() { return this->ps; }
};

String::String() {
    this->length = 0;
    this->ps = NULL;
}

String::String(const char* str)
{
    this->length = strlen(str);
    this->ps = new char[this->length + 1];
    strcpy(this->ps, str);
}

String::~String() {
    if (this->ps) delete[] this->ps;
    this->length = 0;
    this->ps = NULL;
}

const String& String::operator+(const String& strSrc) {
    String* tempS;
    tempS = new String();
    tempS->length = this->length + strSrc.length;
    if (tempS->ps != NULL) delete[] tempS->ps;
    tempS->ps = new char[tempS->length + 1];
    strcpy(tempS->ps, this->ps);
    strcat(tempS->ps, strSrc.ps);
    return (*tempS);
}

const String& String::operator=(String& strSrc) {
    if (this != &strSrc) {
        this->length = strSrc.length;
        if (this->ps) delete[] this->ps;
        this->ps = new char[this->length + 1];
        strcpy(this->ps, strSrc.ps);
    }
    return *this;
}
```



```
int main()
{
    String s1("The first string. ");
    String s2("and the second one. ");
    String s3;

    s3 = "A string. ";
    s3 = s3 + s1.getString();
    cout << s3.getString() << endl;

    return 0;
}
```

- a. "A string. The first string. "
- b. "A string. "
- c. Nothing, due to compile-time error message for not appropriate implementations of the overloaded operators
- d. "The first string. A string. "

2. What will be the output of the following C++ application?

```
#include <stdio.h>

void f(char &x, int& y)
{
    y++;
    x += y;
}

int main()
{
    int a = 65;
    char b = 1;

    f((char&)a, (int&)b);

    printf("%d %d", a, b);

    return 0;
}
```

- a. Nothing, due to a compile-time error for the call to the function f
- b. 67 2
- c. Nothing, due to a compile-time error for the implementation of the function f
- d. Nothing, due to a run-time error

3. What will be the output of the following C++ application?

```
#include <iostream>
using namespace std;

int main()
{
    int y = 0;
    constexpr char n = 'n';
    constexpr char m = '?';

    switch ((char)(y == 0)) {
    case 'n':
        cout << "\\n\\' has been chosen\\n";
        break;
    case 0:
        cout << y << " has been chosen\\n";
        break;
    }
```



```
case m:
    cout << m << " has been chosen\n";
    break;
default:
    cout << "Nothing has been chosen\n";
    break;
}
```

```
return 0;
```

```
}
```

- a. 'n' has been chosen
- b. ? has been chosen
- c. 0 has been chosen
- d. Nothing has been chosen

4. What is the output when the below C application will run (Little-Endian is the rule to store binary content)?

```
#include <stdio.h>
```

```
int main()
```

```
{
```

```
    int a = 0x12340000;
```

```
    printf("0x%02X\n", (char)a + 1);
```

```
    return 0;
```

```
}
```

- a. 0x12340001
- b. 0x1234
- c. 0x01
- d. 0x12340000

5. What is the right statement regarding the following C++ application?

```
#include <stdio.h>
```

```
#include <string.h>
```

```
class Student
```

```
{
```

```
public:
```

```
    int age;
```

```
    char* name;
```

```
public:
```

```
    Student(int v = 0, char* sname = NULL)
```

```
{
```

```
    this->age = v;
```

```
    if (sname != NULL)
```

```
{
```

```
        this->name = new char[strlen(sname) + 1];
```

```
        strcpy(this->name, sname);
```

```
}
```

```
    else
```

```
        this->name = NULL;
```

```
}
```

```
    Student(const Student& s)
```

```
{
```

```
    this->name = new char[strlen(s.name) + 1];
```

```
    strcpy(this->name, s.name);
```

```
    this->age = s.age;
```

```
}
```



```
~Student()
{
    if (this->name)
        delete[] this->name;
}

};

int main()
{
    int age1 = 21;

    Student s1(age1, (char*)"John");
    Student s2 = s1;
    Student s3 = s2;
    Student s4 = s1;

    s3 = s4;

    return 0;
}
```

- a. An overloaded version of operator = will be called one single time and the application will run without errors
- b. The default implementation of operator = will be called one single time and the application will run without errors
- c. No call to operator =
- d. The default implementation of operator = will be called one single time and the application will generate run-time error

6. What is the output when the below C++ application will run?

```
#include <iostream>
using namespace std;

int main()
{
    int count = 0;
    string name("John Smith");

    cout << name << " (" << name.length() << ")" << " & ";
    string name_jr = name + " Jr.";
    cout << name_jr << " (" << name_jr.length() << ")\n";

    return 0;
}
```

- a. John Smith (10) & John Smith Jr. (14)
- b. John Smith (14) & John Smith Jr. (14)
- c. John Smith (10) & John Smith Jr. (10)
- d. John Smith (10) & John Smith (10)

7. What will be the content of the file test.txt as string view after running the following C application?

```
#include <stdio.h>

void main()
{
    unsigned char buffer[] = { 'A', 'B', 'C', 'D' };

    FILE* fp;
    fp = fopen("test.txt", "w");
}
```



```
for (int i = 0; i < sizeof(buffer); i++)  
    fwrite((buffer + i), sizeof(unsigned char), 1, fp);
```

```
fclose(fp);
```

```
}
```

- a. 65666768
- b. DCBA
- c. 'A"B"C"D'
- d. ABCD

8. What will be the output of the following C application?

```
#include <stdio.h>
```

```
void main()
```

```
{
```

```
    unsigned char v[] = { 1, 2, 9 };  
    unsigned char* pa = v;
```

```
    *(pa + 1) = *(pa) + 1 + pa[2];  
    printf("\na = %u, *pa = %u", v[1], pa[2]);
```

```
}
```

- a. v[1] = 2, pa[2] = 9
- b. v[1] = 1, pa[2] = 9
- c. v[1] = 2, pa[2] = 11
- d. v[1] = 11, pa[2] = 9

9. In the following C++ application, how many times the operator delete will be called?

```
#include <stdio.h>
```

```
#include <string.h>
```

```
class Student
```

```
{
```

```
public:
```

```
    int age;  
    char* name;
```

```
public:
```

```
    Student(int v = 0, char* sname = NULL)
```

```
{
```

```
    this->age = v;  
    if (sname != NULL)  
    {  
        this->name = new char[strlen(sname) + 1];  
        strcpy(this->name, sname);
```

```
    }
```

```
    else
```

```
        this->name = NULL;
```

```
}
```

```
    Student(const Student& s)
```

```
{
```

```
    this->name = new char[strlen(s.name) + 1];  
    strcpy(this->name, s.name);  
    this->age = s.age;
```

```
}
```

```
    Student operator+(Student s)
```

```
{
```

```
    Student tstud;  
    tstud.age = (this->age + s.age) / 2;
```



```
tstud.name = new char[strlen(this->name) + strlen(s.name) + 1];
strcpy(tstud.name, this->name);
strcpy(tstud.name + strlen(this->name), s.name);

return tstud;
}

~Student()
{
    if (this->name)
    {
        delete[] this->name;
    }
}

void operator=(Student s)
{
    if (this->name)
    {
        delete[] this->name;
    }
    this->name = new char[strlen(s.name) + 1];
    strcpy(this->name, s.name);
    this->age = s.age;
}
};

int main()
{
    int age1 = 21, age2 = 20;

    Student s1(age1, (char*)"John"), s2(age2, (char*)"James");
    Student s3 = s1, *ps = new Student(s2);
    Student s4;

    s3 = s3 + s2;

    if(ps)
        delete ps;

    ps = &s3;

    return 0;
}
```

- a. 10 times
- b. 9 times
- c. Application generates compile-time errors due to wrong call to operator =
- d. 8 times

10. What will be the output of the following C++ application?

```
#include <iostream>
using namespace std;

class A
{
public:
    void print()
    {
        cout << "Class A" << endl;
    }
};
```



```
class B
{
public:

    B(const A& x) {}
    B() {}

    B& operator= (const A& x) { return *this; }

    void print()
    {
        cout << "Class B" << endl;
    }
};

int main()
{
    A ob_A, * pob_A = NULL;
    B ob_B1, ob_B2 = ob_A, * pob_B = NULL;

    ob_B1 = ob_A;
    pob_B = &ob_B1;
    pob_A = (A*)pob_B;

    pob_B->print();
    pob_A->print();

    pob_B = (B*)&ob_A;
    pob_B->print();

    return 0;
}
```

a.  
Class B

Class A

Class A

b.  
Class B

Class B

Class A

c.  
Class B

Class A

Class B

d.  
Class B

Class B

Class B



11. What will be the output of the following C++ application (x86 architecture C compiler, pointers are FAR by default)?

```
#include <stdio.h>
#include <string.h>

int main()
{
    char str[] = "A string";
    char* pstr = new char[strlen(str) + 1];
    memset(pstr, 0, strlen(str) + 1);
    memcpy(pstr, str, strlen(str));

    printf("%d %d %d %d\n", sizeof(str), sizeof(pstr), strlen(str), strlen(pstr + 1));

    return 0;
}
a. 9 8 7 7
b. 9 4 8 7
c. 4 4 8 7
d. 9 4 8 8
```

12. What will be the output of the following C++ application?

```
#include <iostream>
using namespace std;

class MyClass {
private:
    int m;
public:
    static int n;

    MyClass()
    {
        m = 0;
        n++;
    }

    MyClass(const MyClass& s)
    {
        this->m = s.m;
        n++;
    }

    ~MyClass()
    {
        n--;
    }
};

int MyClass::n = 0;

int main() {
    MyClass mc1, * pmc = new MyClass(mc1);
    MyClass mc2 = mc1;

    cout << MyClass::n << " ";
    mc1 = mc2;
```





```
cout << MyClass::n << endl;
```

```
return 0;
```

```
}
```

- a. 2 3
- b. 3 2
- c. 2 2
- d. 3 3

13. What is the right choice to make a valid string size allocation and content use of the heap memory in the below C++ code?

a.  
char vstr[] = "tst";

```
char* str = new char[sizeof("Exam") + sizeof(vstr) + 1];
```

```
strcpy(str, vstr);
```

```
strcat(str, "Exam");
```

b.  
char vstr[] = "tst";

```
char* str = new char[strlen("Exam") + sizeof(vstr) + 1];
```

```
strcpy(str, vstr);
```

```
strcat(str, "Exam");
```

c.  
char vstr[] = "tst";

```
char* str = new char[strlen("Exam") + sizeof(vstr)];
```

```
strcpy(str, vstr);
```

```
strcat(str, "Exam");
```

d.  
char vstr[] = "tst";

```
char* str = new char[sizeof("Exam") + sizeof(vstr)];
```

```
strcpy(str, vstr);
```

```
strcat(str, "Exam");
```

14. What will be the output of the following C++ application?

```
#include <iostream>  
using namespace std;
```



```
class MyClass {
    char x;
public:
    static int n;

    MyClass(char in = '0')
    {
        this->x = in;
        n++;
    }

    ~MyClass()
    {
        n--;
    }

    void change(char in)
    {
        this->x += in;
    }

    char getX()
    {
        return this->x;
    }

    void setX(char in)
    {
        this->x -= in;
    }
};

int MyClass::n = 0;

void change(MyClass& obj, char in)
{
    obj.setX(in);
}

int main() {
    MyClass mc1(67), mc2(67), * pmc = NULL;

    {
        MyClass mc3(65);
        mc2.change(MyClass::n);
        mc1 = mc3;
    }

    pmc = &mc2;
    pmc->change(MyClass::n);

    printf("%d %d\n", mc1.getX(), pmc->getX());

    return 0;
}
```

- a. 65 72
- b. 71 72
- c. 65 65
- d. 72 72



15. What will be the output of the following C++ application?

```
#include <stdio.h>

char f1(char x, int* y)
{
    (*y)++;
    x += *y;

    return x;
}

char f1(char* x, int y)
{
    y++;
    *x += y;

    return *x + y;
}

int main()
{
    char a[] = { 35, 36, 37 };
    int b = 7;

    a[0] = f1(a[0], &b);
    b = f1(a, b);

    printf("%d %d\n", a[0], b);

    return 0;
}
```

- a. 43 61
- b. 52 61
- c. 52 53
- d. 43 53



16. How will be displayed the “car01.txt”, file after running the following Java code?

```
import java.io.ObjectOutputStream;
import java.io.FileOutputStream;
import java.io.IOException;

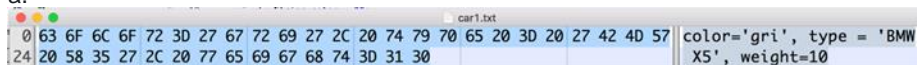
class Auto {
    private int weight = 0;
    private String type = "";
    private String color = "";

    public Auto(int weight, String type, String color){
        this.weight = weight; this.type = type; this.color = color;
    }
    public Integer getWeight() { return weight; }
    public void setWeight(Integer weight) { this.weight = weight; }
    public String getType() { return type; }
    public String getColor() { return color; }
    public void setColor(String color) { this.color = color; }
    public String toString() {
        return "Car{" + "color=" + color + ""
            + ", type = " + type + ", weight=" + weight + '}';
    }
}

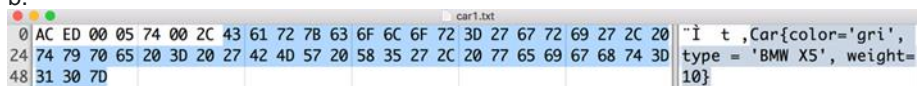
public class MainTest2 {
    public static void main(String[] args)
    {
        try (FileOutputStream fos = new FileOutputStream("car01.txt");
            ObjectOutputStream out = new ObjectOutputStream(fos);) {

            Auto c = new Auto(10, "BMW X5", "gri");
            out.writeObject(c);
        } catch (IOException e) {
            e.printStackTrace();
        }
    }
}
```

a.



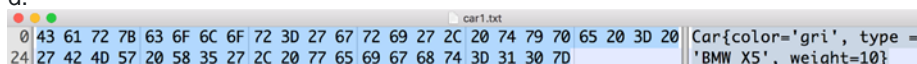
b.



c.

Runtime error

d.





17. What will display the following Java code, if the given input in console is "Hello World Java/Kotlin!"?

```
import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;

public class MainTest2 {
    public static void main(String[] args)
    {
        String str = "";
        BufferedReader obj = new BufferedReader(new InputStreamReader(System.in));
        do {
            try {
                str = (String) obj.readLine();
            } catch (IOException e) {
                e.printStackTrace();
            }
            System.out.print(str);
        } while(!str.equals("quit"));
    }
}
```

- a. Nothing because of compilation error
- b. Hello World Java/Kotlin!
- c. Nothing because of runtime error
- d. Hello quit

18. What will display the following Java code?

```
class A
{
    public A() {
        System.out.print(" # Class A Constr.");
    }
}

class B implements A
{
    public B() {
        System.out.print(" # Class B Constr.");
    }
}

class C extends B
{
    public C() {
        System.out.print(" # Class C Constr.");
    }
}

public class MainTest2
{
    public static void main(String[] args)
    {
        C cobj = C();
        cobj->toString();
    }
}
```



- a. # Class C Constr. # Class B Constr. # Class A Constr.
- b. # Class A Constr. # Class B Constr. # Class C Constr.
- c. compilation error
- d. runtime error

19. What will display the following Java code?

```
import java.util.Arrays;
import java.util.List;

public class MainTest2 {
    public static void main(String[] args)
    {
        List<Integer> numbers = Arrays.asList(60, 25, 35, 40);
        int factor = 4;

        System.out.println(
            numbers.stream().filter(number -> number % 2 == 0)
                .mapToInt(e -> e * factor).sum());
    }
}
```

- a. Nothing because of compilation error
- b. 500
- c. Nothing because of runtime error
- d. 400

20. What will display the following Java code?

```
import java.util.HashMap;
import java.util.Map;

final class PhoneNumber {
    private final short areaCode, prefix, lineNum;

    public PhoneNumber(int areaCode, int prefix, int lineNum) {
        this.areaCode = rangeCheck(areaCode, 999, "area code");
        this.prefix = rangeCheck(prefix, 999, "prefix");
        this.lineNum = rangeCheck(lineNum, 9999, "line num");
    }

    private static short rangeCheck(int val, int max, String arg) {
        if (val < 0 || val > max)
            throw new IllegalArgumentException(arg + ": " + val);

        return (short) val;
    }

    @Override public boolean equals(Object o) {
        if (o == this)
            return true;
        if (!(o instanceof PhoneNumber))
            return false;
        PhoneNumber pn = (PhoneNumber) o;
        return pn.lineNum == lineNum && pn.prefix == prefix && pn.areaCode == areaCode;
    }
}

public class MainTest2 {
    public static void main(String[] args)
    {
        Map<PhoneNumber, String> m = new HashMap<>();
        PhoneNumber pk = new PhoneNumber(707, 867, 5309);
        m.put(pk, "John");
        String val = m.get(pk);
        System.out.println("val = " + val);
    }
}
```



- a. Nothing because of compilation error
- b. Nothing because of runtime error
- c. val = John
- d. val = null

21. What will display the following Java code?

```
import java.util.Date;

class Period {
    private final Date start;
    private final Date end;
    public Period(Date start, Date end) {
        if (start.compareTo(end) > 0)
            throw new IllegalArgumentException(start + " after " + end);

        this.start = start;
        this.end = end;
    }
    public Date start() {
        return start;
    }
    public Date end() {
        return end;
    }

    @Override
    public String toString() {
        return new String("start = "+start+", end = "+end);
    }
}

public class MainTest2 {
    public static void main(String[] args) {
        Date start = new Date();
        Date end = new Date();
        Period p1 = new Period(start, end);
        Period p2 = new Period(start, end);
        p1 = p2;
        System.out.println("p1 equals p2 - " + (p1.equals(p2)));
        System.out.println("p1 == p2 - " + (p1 == p2));
    }
}
```

- a. Nothing because of compilation error
- b. Nothing because of runtime error
- c. p1 equals p2 - false \n p1 == p2 - true
- d. p1 equals p2 - true \n p1 == p2 - true



22. What will display the following Java code?

```
import java.io.IOException;
import java.io.ObjectInputStream;
import java.io.ObjectOutputStream;
import java.io.Serializable;
import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;

class Coffee implements Serializable {
    private static final long serialVersionUID = 1L;
    public String beverageName;
    public Coffee(String name) { this.beverageName = name; }
    @Override
    public String toString() { return String.format("%s", this.beverageName); }
}

class ReaderFromFile implements Runnable {
    public static void startReading(String[] args)
    {
        try (FileInputStream fis = new FileInputStream("obj.txt")) {

            ObjectInputStream oos = new ObjectInputStream(fis);
            System.out.println((Coffee) oos.readObject());
        } catch (Exception e) { e.printStackTrace(); }
    }
    @Override
    public void run() { startReading(new String[] {""}); }
}

class WriterToFile implements Runnable {
    public static void startWriting() {
        FileOutputStream fos = null;
        try {
            fos = new FileOutputStream("obj.txt");
            Coffee c = new Coffee("Americano");
            ObjectOutputStream out = new ObjectOutputStream(fos);
            out.writeObject(c);
            fos.close();
        } catch (IOException e) { e.printStackTrace(); }
    }
    @Override
    public void run() { startWriting(); }
}

public class MainTest2 {
    public static void main(String[] args)
    {
        File f = new File("obj.txt");
        if (f.exists()) f.delete();
        Thread tc = new Thread(new WriterToFile()); tc.start();
        Thread ts = new Thread(new ReaderFromFile()); ts.start();
    }
}
```

- Always runtime exception
- Always "Americano"
- Sometimes "Americano" and sometimes runtime exception
- Nothing because of compilation error





23. What will display the following Java code?

```
import java.util.List;
import java.util.ArrayList;

public class MainTest2 {
    public static void Main(String[] args) {
        List<Integer> marks = new ArrayList<Integer>();
        marks.add(94);
        marks.add(92);
        for (Integer x : marks) {
            System.out.print(x + " ");
        }
        System.out.print(" # ");
        marks.add(1, 50);
        for (Integer x : marks) {
            System.out.print(x + " ");
        }
        System.out.print(" # ");
        System.out.print(" " + marks.get(2));
        System.out.print(" " + marks.indexOf(0));
        System.out.print(" " + marks.remove(2));
        System.out.print(" # ");
        for (Integer x :: marks)
        {
            System.out.print(" ", x);
        }
        System.out.println();
    }
}
```

- a. Nothing because of compilation error
- b. 94 92 # 94 50 92 # 92 -1 92 # 94 -1 50
- c. 94 92 # 94 50 92 # 92 -1 92 # 94 50
- d. Nothing because of runtime error



24. What will be displayed, after running the following Java code?

```
import java.util.Arrays;
import java.util.List;
import java.util.concurrent.ExecutorService;
import java.util.concurrent.Executors;
import java.util.concurrent.TimeUnit;

class MyTask implements Runnable {
    private Integer field;
    private static Object lock = new Object();

    public MyTask(int f) { this.field = (Integer)f; }

    @Override
    public void run() {
        synchronized(lock) {
            this.field = (this.field << 2) / 2;
            System.out.print(" " + this.field);
        }
    }
}

public class MainTest2 {

    public static void main(String[] args)
    {
        List<Runnable> tasks = Arrays.asList(new MyTask(0), new MyTask(1),
            new MyTask(2), new MyTask(3));
        ExecutorService executorService = Executors.newFixedThreadPool(tasks.size());

        for (Runnable r : tasks) {
            executorService.execute(r);
        }

        executorService.shutdown();
        try {
            if (!executorService.awaitTermination(800, TimeUnit.MILLISECONDS)) {
                executorService.shutdownNow();
            }
        } catch (InterruptedException e) {
            executorService.shutdownNow();
        }
    }
}
```

- a. 0 4 8 12
- b. 0 2 4 6
- c. Runtime error
- d. 0 1 2 3



25. What will display the following Java code?

```
import java.util.Arrays;

public class MainTest2 {
    public static void main(String... args) {
        int sum = Arrays.stream(new int[]{1, 5, 7, 8})
            .filter(i -> i >= 6)
            .map(i -> i * 7)
            .sum();
        System.out.printf("sum = %d", sum);
    }
}
```

- a. sum = 140
- b. Nothing because of runtime error
- c. Nothing because of compilation error
- d. sum = 105

26. What will display the following Java code?

```
import java.util.List;
import java.util.ArrayList;

public class MainTest2 {
    public static void main(String[] args) {
        List<Integer> marks = new ArrayList<Integer>();
        marks.add(91); marks.add(73); marks.add(21);
        marks.remove(21);
        for (Integer x : marks) {
            System.out.print(x + " ");
        }
    }
}
```

- a. 91 73 21
- b. Nothing because of compilation error
- c. 91 73
- d. Nothing because of runtime error



27. What will display the following Java code?

```
import java.util.List;
import java.util.ArrayList;

class Coffee {
    public String beverageName;
    public double price;

    public Coffee(String name, double price) {
        this.beverageName = name;
        this.price = price;
    }

    public double getPrice() {return this.price;}
    public String getName() {return this.beverageName;}

    @Override
    public String toString() {
        return String.format("%s %f", this.beverageName, this.price);
    }
}

public class MainTest2 {

    public static void main(String[] args)
    {
        List<Coffee> orders = new ArrayList<Coffee>();

        orders.add(new Coffee("ESPRESSO", 15));
        orders.add(new Coffee("ESPRESSO", 15));
        orders.add(new Coffee("CAPPUCCINO", 17));
        orders.add(new Coffee("CAPPUCCINO", 17));
        orders.add(new Coffee("FLAT WHITE", 16));
        orders.add(new Coffee("FLAT WHITE", 16));

        orders.stream().distinct().filter(c -> (c.getPrice() > 15))
            .map(coffee -> String.format("%s, %f",
                coffee.beverageName, coffee.price))
            .forEach(System.out::print);
    }
}
```

- a. Nothing because of runtime error
- b. CAPPUCCINO, 17.000000; FLAT WHITE, 16.000000;
- c. CAPPUCCINO, 17.000000;
- d. CAPPUCCINO, 17.000000; CAPPUCCINO, 17.000000; FLAT WHITE, 16.000000; FLAT WHITE, 16.000000;



28. What will display the following Java code?

```
class MyGen<T>
{
    T var;
    void set(T var)
    {
        this.var = var;
    }
    T get()
    {
        return var;
    }
}

public class MainTest2 {
    public static void main(String[] args) {
        MyGen<Float> m = new MyGen<Float>();
        m.set((float)7834.5);
        System.out.println(m.get());
    }
}
```

- a. 2034
- b. 7834.5
- c. Nothing because of runtime error
- d. Nothing because of compilation error

29. What will display the following Java code?

```
class A
{
    int i = 305;
}

class B extends A
{
    int i = 897;
}

public class MainTest2
{
    public static void main(String[] args) {
        A a = new B();
        System.out.println(a.i);
    }
}
```

- a. 305
- b. runtime error
- c. 897
- d. compilation error



30. What will display the following Java code?

```
import java.io.File;
import java.io.IOException;

public class MainTest2 {
    public static void main(String[] args)
    {
        String name = null;
        File file = null;
        try {
            file = new File(".", name);
        } catch (Exception ioe) {

        }
        if(file != null && file.exists())
            System.out.print("true");
        else
            System.out.print("false");
    }
}
```

- a. Runtime error
- b. Compilation error
- c. false
- d. true

\* Observation: Each question has same number of points.



<b>Question</b>	<b>Correct Answer</b>
1	c
2	b
3	d
4	c
5	d
6	a
7	d
8	d
9	b
10	c
11	b
12	d
13	c
14	a
15	b
16	c
17	b
18	c
19	d
20	c
21	d
22	c
23	a
24	b
25	d
26	d
27	d
28	b
29	a
30	c