```
public class Test (
    static int count = 0;
    int i = 0;

public void changeCount() {
        while (i < 5) {
            i++;
            count++;
        }
}

public static void main(String[] args) {
        Test check1 = new Test();
        Test check2 = new Test();
        check1.changeCount();
        check2.changeCount();
        System.out.print(check1.count + " : " + check2.count);
}</pre>
```

A. 10:10

B. 5:5

C. 5:10

D. Compilation fails

Answer: A

- 2. Which three are advantages of the Java exception mechanism?
- A. Improves the program structure because the error handling code is separated from the normal program function
- B. Provides a set of standard exceptions that covers all the possible errors
- C. Improves the program structure because the programmer can choose where to handle exceptions
- D. Improves the program structure because exceptions must be handled in the method in which they occurred
- E. Allows the creation of new exceptions that are tailored to the particular program being created

Answer: A,C,E

3.

```
public class Person {
    String name;
    int age = 25;
    public Person(String name) {
                                                    //line n1
        this();
        setName(name);
    public Person(String name, int age) {
                                                    //line n2
        Person (name);
        setAge (age);
    //setter and getter methods go here
    public String show() {
    return name + " " + age + " " + number ;
    public static void main (String[] args) (
       Person p1 = new Person("Jesse");
        Person p2 = new Person("Walter", 52);
        System.out.println(p1.show());
        System.out.println(p2.show());
}
```

What is the result?

A. Jesse 25

Walter 52

- B. Compilation fails only at line n1
- C. Compilation fails only at line n2
- D. Compilation fails at both line n1 and line n2

Answer: D

LocalDate date1 = LocalDate.now();
LocalDate date2 = LocalDate.of(2014, 6, 20);
LocalDate date3 = LocalDate.parse("2014-06-20", DateTimeFormatter.ISO_DATE);
System.out.println("date1 = " + date1);
System.out.println("date2 = " + date2);
System.out.println("date3 = " + date3);

Assume that the system date is June 20, 2014. What is the result?

```
    A) date1 = 2014-06-20
        date2 = 2014-06-20
        date3 = 2014-06-20
    B) date1 = 06/20/2014
        date2 = 2014-06-20
        date3 = Jun 20, 2014
    C) Compilation fails.
    D) A DateParseException is thrown at runtime.
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D

Answer: A

4.

Given the code fragment:

What is the result?

- A. May 04, 2014T00:00:00.000
- B. 2014-05-04T00:00: 00. 000
- C. 5/4/14T00:00:00.000
- D. An exception is thrown at runtime.

Answer: D

Explanation:

java.time.temporal.UnsupportedTemporalTypeException: Unsupported field: HourOfDay

6.

And given the requirements:

```
\implies If the value of the qty variable is greater than or equal to 90, discount = 0.5 \implies If the value of the qty variable is between 80 and 90, discount = 0.2
```

Which two code fragments can be independently placed at line n1 to meet the requirements?

```
□ A) if (qty >= 90) { discount = 0.5; }
    if (qty > 80 && qty < 90) { discount = 0.2; }
□ B) discount = (qty >= 90) ? 0.5 : 0;
    discount = (qty > 80) ? 0.2 : 0;
□ C) discount = (qty >= 90) ? 0.5 : (qty > 80)? 0.2 : 0;
□ D) if (qty > 80 && qty < 90) {
        discount = 0.2;
    } else {
        discount = 0;
    }
    if (qty >= 90) {
        discount = 0.5;
    } else {
        discount = 0.5;
    } else {
        discount = 0;
}
□ E) discount = (qty > 80) ? 0.2 : (qty >= 90) ? 0.5 : 0;
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E

Answer: A,C

7.

Which three statements are true about the structure of a Java class?

- A. A class can have only one private constructor.
- B. A method can have the same name as a field.
- C. A class can have overloaded static methods.
- D. A public class must have a main method.
- E. The methods are mandatory components of a class.
- F. The fields need not be initialized before use.

Answer: A,B,C

8.

```
public class Product {
    int id;
    String name;
    public Product(int id, String name) {
        this.id = id;
        this.name = name;
    }
}

And given the code fragment:

4. Product p1 = new Product(101, "Pen");
5. Product p2 = new Product(101, "Pen");
6. Product p3 = p1;
7. boolean ans1 = p1 == p2;
8. boolean ans2 = p1.name.equals(p2.name);
9. System.out.print(ans1 + ":" + ans2);
```

What is the result?

- A. true:true
- B. true:false
- C. false:true
- D. false:false

Given:

```
public static void main(String[] args) {
   String ta = "A ";
   ta = ta.concat("B ");
   String tb = "C ";
   ta = ta.concat(tb);
   ta.replace('C', 'D');
   ta = ta.concat(tb);
   System.out.println(ta);
}
```

What is the result?

ANS · ABCC

10.

```
1. class X {
2.
        public void printFileContent() {
3.
            /* code goes here */
            throw new IOException();
 4.
5.
        }
6. }
7. public class Test {
        public static void main(String[] args) {
9.
            X \times bj = new X();
10.
            xobj.printFileContent();
11.
        }
12. }
```

Which two modifications should you make so that the code compiles successfully?

```
    □ A) Replace line 8 with public static void main(String[] args) throws Exception (
    □ B) Replace line 10 with:
        try {
                  xobj.printFileContent();
        }
        catch (Exception e) { }
        catch (IOException e) { }
        □ C) Replace line 2 with public void printFileContent() throws IOException {
        □ D) Replace line 4 with throw IOException("Exception raised");
        □ E) At line 11, Insert throw new IOException();
```

```
int[] intArr = {8, 16, 32, 64, 128};
```

Which two code fragments, independently, print each element in this array?

ANS: B & E

12.

```
int nums1[] = new int[3];
int nums2[] = {1, 2, 3, 4, 5};
nums1 = nums2;
for (int x : nums1) {
        System.out.print(x + ":");
}
```

What is the result?

- **A.** 1:2:3:4:5:
- **B.** 1:2:3:
- C. Compilation fails.
- D. An ArrayoutofBoundsException is thrown at runtime.

Answer: A

```
public class Test {
    public static void main (String[] args) {
        String[][] chs = new String[2][];
        chs[0] = new String[2];
        chs[1] = new String[5];
        int i = 97;
        for (int a = 0; a < chs.length; a++) {
            for (int b = 0; b < chs.length; b++) {
                chs[a][b] = "" + i;
                i++;
        }
        for (String[] ca : chs) {
            for (String c : ca) {
                System.out.print(c + " ");
            System.out.println();
        }
    }
}
```

A. 97 98

99 100 null null null

B. 91 98

99 100 101 102 103

- C. Compilation rails.
- D. A NullPointerException is thrown at runtime.
- E. An ArrayIndexOutOfBoundsException is thrown at runtime.

Answer: A

14.

```
public class App (
   public static void main(String[] args) (
    int i = 10;
    int j = 20;
    int k = j += i / 5;
    System.out.print(i + " : " + j + " : " + k);
}
```

What is the result?

A. 10:22:20

B. 10:22:22

C. 10:22:6

D. 10:30:6

Answer: B

```
15.
Given:
public class FieldInit {
       char c;
       boolean b;
       float f;
       void printAll() {
              System.out.println("c = " + c);
              System.out.println("c = " + b);
              System.out.println("c = " + f);
      public static void main(String[] args) {
             FieldInit f = new FieldInit();
              f.printAll();
What is the result?
A. c = null
   b = false
   f = 0.0F
B. c = 0
   b = false
   f = 0.0f
C. c = null
   b = true
   f = 0.0
D.c =
   b = false
   f = 0.0
Answer: D
16.
                  Given the code fragment:
                  String shirts[][] = new String[2][2];
                  shirts[0][0] = "red";
                  shirts[0][1] = "blue";
                  shirts[1][0] = "small";
                  shirts[1][1] = "medium";
```

Which code fragment prints red: blue: small: medium?

```
C A) for (int index = 1; index < 2; index++) {
        for (int idx = 1; idx < 2; idx++) {
             System.out.print(shirts[index][idx] + ":");
    }
OB) for (int index = 0; index < 2; ++index) {
        for (int idx = 0; idx < index; ++idx) {
             System.out.print(shirts[index][idx] + ":");
    }
CC) for (String c : colors) {
        for (String s : sizes) {
             System.out.println(s + ":");
    }
O D) for (int index = 0; index < 2;) {</pre>
        for (int idx = 0; idx < 2;) {
             System.out.print(shirts[index][idx] + ":");
        index++;
```

ANS: D

17.

```
public class Test {

  public static void main(String[] args) {
     if (args[0].equals("Hello") ? false : true) {
        System.out.println("Success");
     } else {
        System.out.println("Failure");
     }
}
```

And given the commands:

javac Test.Java Java Test Hello

What is the result?

- A. Success
- B. Failure
- C. Compilation fails.
- D. An exception is thrown at runtime

Answer: B

- A. Reading Card Checking Card
- B. Compilation fails only at line n1.
- C. Compilation fails only at line n2.
- D. Compilation fails only at line n3.
- E. Compilation fails at both line n2 and line n3.

Answer: D

19.

```
public static void main(String[] args) {
    String str = " ";
    str.trim();
    System.out.println(str.equals("") + " " + str.isEmpty());
}
```

What is the result?

A. true true

B. true false

C. false false

D. false true

```
Base.java:
class Base {
   public void test() {
        System.out.println("Base ");
DerivedA.java:
class DerivedA extends Base {
    public void test(){
        System.out.println("DerivedA ");
DerivedB.java:
class DerivedB extends DerivedA {
    public void test(){
        System.out.println("DerivedB ");
    public static void main(String[] args) {
        Base b1 = new DerivedB();
        Base b2 = new DerivedA();
        Base b3 = new DerivedB();
        b1 = (Base) b3;
        Base b4 = (DerivedA) b3;
        b1.test();
        b4.test();
```

- A. Base DerivedA
- B. Base DerivedB
- C. DerivedB DerivedB
- D. DerivedB DerivedA
- E. A classcast Except ion is thrown at runtime.

Answer: C

21.

```
public static void main(String[] args) {
   int ii = 0;
   int jj = 7;
   for (ii = 0; ii < jj - 1; ii = ii + 2) {
        System.out.print(ii + " ");
    }
}</pre>
```

A. 24

B. 0246

C. 0 2 4

D. Compilation fails

Answer: C

22.

```
public class Planet {
        public String name;
        public int moons;
        public Planet (String name, int moons) {
            this.name = name;
            this.moons = moons;
        }
And the following main method:
    public static void main(String[] args) {
        Planet[] planets = {
            new Planet ("Mercury", 0),
             new Planet ("Venus", 0),
             new Planet("Earth", 1),
new Planet("Mars", 2)
        };
        System.out.println(planets);
        System.out.println(planets[2]);
        System.out.println(planets[2].moons);
```

C A) planets Earth 1

- CB) [LPlanets.Planet;@15db9742 Earth
- CC) [LPlanets.Planet;@15db9742 Planets.Planet@6d06d69c 1
- OD) [LPlanets.Planet;015db9742 Planets.Planet06d06d69c [LPlanets.Moon;07852e922
- C E) [LPlanets.Planet;@15db9742 Venus 0

- 23. Which statement is true about Java byte code?
- A. It can run on any platform.
- B. It can run on any platform only if it was compiled for that platform.
- C. It can run on any platform that has the Java Runtime Environment.
- D. It can run on any platform that has a Java compiler.
- E. It can run on any platform only if that platform has both the Java Runtime Environment and a Java compiler.

Answer: C

24.

```
public class Customer {
    ElectricAccount acct = new ElectricAccount();

    public void useElectricity(double kWh) {
        acct.addKWh(kWh);
    }
}

public class ElectricAccount {
    private double kWh;
    private double rate = 0.07;
    private double bill;

    //line n1
}
```

```
O A) public void addKWh (double kWh) {
        this.kWh += kWh;
        this.bill = this.kWh*this.rate;
CB) public void addKWh(double kWh) {
        if (kWh > 0) {
            this.kWh += kWh;
            this.bill = this.kWh * this.rate;
C C) private void addKWh(double kWh) {
        if (kWh > 0) {
            this.kWh += kWh;
            this.bill = this.kWh*this.rate;
        }
    }
CD) public void addKWh(double kWh) {
        if(kWh > 0) {
            this.kWh += kWh;
            setBill (this.kWh);
    public void setBill (double kWh) {
        bill = kWh*rate;
```

Answer: B

```
public class Employee {
    String name;
    boolean contract;
    double salary;
    Employee() {
        // line n1
    }
    public String toString() {
        return name + ":" + contract + ":" + salary;
    }
    public static void main(String[] args) {
        Employee e = new Employee();
        // line n2
        System.out.print(e);
    }
}
```

Which two modifications, when made independently, enable the code to print joe:true: 100.0?

```
☐ A) Replace line n2 with:
     e.name = "Joe";
     e.contract = true;
     e.salary = 100;
☐ B) Replace line n2 with:
     this.name = "Joe";
     this.contract = true;
     this.salary = 100;
☐ C) Replace line n1 with:
     this.name = new String("Joe");
     this.contract = new Boolean(true);
     this.salary = new Double(100);
☐ D) Replace line n1 with:
     name = "Joe";
     contract = TRUE;
     salary = 100.0f;
☐ E) Replace line n1 with:
     this ("Joe", true, 100);
```

Answer: A,C 26.

Given the fragment:

```
24. float var1 = (12_345.01 >= 123_45.00) ? 12_456 : 124_56.02f;
25. float var2 = var1 + 1024;
26. System.out.print(var2);
```

- A. 13480.0
- B. 13480.02
- C. Compilation fails
- D. An exception is thrown at runtime

Answer: A

27.

```
3. public static void main(String[] args) {
4.    int iVar = 100;
5.    float fVar = 100.100f;
6.    double dVar = 123;
7.    iVar = fVar;
8.    fVar = iVar;
9.    dVar = fVar;
10.    fVar = dVar;
11.    dVar = iVar;
12.    iVar = dVar;
13. }
```

Which three lines fail to compile?

- A. Line 7
- B. Line 8
- C. Line 9
- **D.** Line 10
- E. Line 11
- F. Line 12

Answer: A,D,F

28.

Which code fragment, when inserted at line 3, enables the code to print 10:20?

- A. int[] array n= new int[2];
- B. int[] array;
- array = int[2];
- C. int array = new int[2];
- D. int array [2];

Answer: A

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

class B extends A {
    public B() {
        System.out.print("B ");
    }
}

class C extends B {

    public C() {
        System.out.print("C ");
    }
    public static void main(String[] args) {
        C c = new C();
    }
}
```

A. CBA

B. C

C. ABC

D. Compilation fails at line n1 and line n2

Answer: C

30.

```
class Test {
  public static void main(String[] args) {
    int numbers[];
    numbers = new int[2];
    numbers[0] = 10;
    numbers[1] = 20;

    numbers = new int[4];
    numbers[2] = 30;
    numbers[3] = 40;
    for (int x : numbers) {
        system.out.print(" "+x);
    }
}
```

What is the result?

A. 10 20 30 40

B. 0 0 30 40

C. Compilation fails

D. An exception is thrown at runtime

Answer: B

```
public class Employee {
    public int salary;
}

public class Manager extends Employee {
    public int budget;
}

public class Director extends Manager {
    public int stockOptions;
}

And given the following main method:

public static void main(String[] args) {
    Employee employee = new Employee();
    Manager manager = new Manager();
    Director director = new Director();
    //line n1
}
```

Which two options fail to compile when placed at line n1 of the main method?

```
A. employee.salary = 50_000;
B. director.salary = 80_000;
C. employee.budget = 200_000;
D. manager.budget = 1_000_000;
E. manager.stockOption = 500;
F. director.stockOptions = 1_000;
```

Answer: C,E

32.

```
4. public static void main(String[] args) {
5.
      boolean opt = true;
       switch (opt) {
6.
7.
           case true:
8.
                System.out.print("True");
9.
               break;
           default:
10.
11.
                System.out.print("***");
12.
13.
       System.out.println("Done");
14. }
```

Which modification enables the code fragment to print TrueDone?

- A. Replace line 5 With String result = "true"; Replace line 7 with case "true":
- B. Replace line 5 with boolean opt = 1; Replace line 7 with case 1=
- C. At line 9, remove the break statement.
- D. Remove the default section.

Answer: A

```
if (aVar++ < 10) {
    System.out.println(aVar + " Hello World!");
} else {
    System.out.println(aVar + " Hello Universe!");
}</pre>
```

What is the result if the integer aVar is 9?

- A. 10 Hello world!
- B. 10 Hello universe!
- C. 9 Hello world!
- D. Compilation fails.

Answer: A

- 34. Which three statements describe the object-oriented features of the Java language?
- A. Objects cannot be reused.
- B. A subclass can inherit from a superclass.
- C. Objects can share behaviors with other objects.
- D. A package must contain more than one class.
- E. Object is the root class of all other objects. F. A main method must be declared in every class.

Answer: B,C,E

35.

```
public static void main(String[] args) {
    ArrayList myList = new ArrayList();
    String[] myArray;
    try {
        while (true) {
            myList.add("My String");
        }
    }
    catch (RuntimeException re) {
        System.out.println("Caught a RuntimeException");
    }
    catch (Exception e) {
        System.out.println("Caught an Exception");
    }
    System.out.println("Caught an Exception");
}
```

What is the result?

- A. Execution terminates in the first catch statement, and caught a RuntimeException is printed to the console.
- B. Execution terminates In the second catch statement, and caught an Exception is printed to the console.

- C. A runtime error is thrown in the thread "main".
- D. Execution completes normally, and Ready to us© is printed to the console.
- E. The code fails to compile because a throws keyword is required.

```
Answer: C
36.
public class TestField {
       int x;
       int y;
       public void doStuff(int x, int y) {
              this.x = x;
              y = this.y;
       public void display() {
              System.out.print(x + "" + y + ":");
       public static void main(String[] args) {
              TestField m1 = new TestField();
              m1.x = 100;
              m1.y = 200;
              TestField m2 = new TestField();
              m2.doStuff(m1.x, m1.y);
              m1.display();
              m2.display();
What is the result?
A. 100 200: 100 200
B. 100 0: 100 0:
C. 100 200: 100 0:
D. 100 0: 100 200:
Answer: C
37.
       Given the code fragment:
              int[] array = {I, 2, 3, 4, 5};
```

And given the requirements:

- 1. Process all the elements of the array in the order of entry.
- 2. Process all the elements of the array in the reverse order of entry.
- 3. Process alternating elements of the array in the order of entry.

Which two statements are true?

- A. Requirements 1, 2, and 3 can be implemented by using the enhanced for loop.
- B. Requirements 1, 2, and 3 can be implemented by using the standard for loop.
- C. Requirements 2 and 3 CANNOT be implemented by using the standard for loop.
- D. Requirement 1 can be implemented by using the enhanced for loop.
- E. Requirement 3 CANNOT be implemented by using either the enhanced for loop or the standard for loop.

Answer: B, D

38.

```
class Caller (
    private void init() (
        System.out.println("Initialized");

    public void start() (
        init();
        System.out.println("Started");

}

public class TestCall (
    public static void main(String[] args) (
        Caller c = new Caller();
        c.start();
        c.init();
}
```

What is the result?

- A Initialized Started
- B. Initialized Started Initialized
- C. Compilation fails
- D. An exception is thrown at runtime

```
MainTest.java:
public class MainTest {
    public static void main(int[] args) {
        System.out.println("int main " + args[0]);
    }
    public static void main(Object[] args) {
        System.out.println("Object main " + args[0]);
    }
    public static void main(String[] args) {
        System.out.println("String main " + args[0]);
    }
}
and commands:
javac MainTest.java
java MainTest 1 2 3
```

- A. int main 1
- B. Object main 1
- C. String main 1
- D. Compilation fails
- E. An exception is thrown at runtime

Answer: C

40.

```
public class MarkList {
    int num;
    public static void graceMarks(MarkList obj4) {
        obj4.num += 10;
    }
    public static void main(String[] args) {
        MarkList obj1 = new MarkList();
        MarkList obj2 = obj1;
        MarkList obj3 = null;
        obj2.num = 60;
        graceMarks(obj2);
    }
}
```

How many MarkList instances are created in memory at runtime?

- A. 1
- **B**. 2
- **C**. 3
- D. 4

Answer: A

```
public class App {
    public static void main(String[] args) {
        String str1 = "Java";
        String str2 = new String("java");
           System.out.println("Equal");
        } else {
           System.out.println("Not Equal");
     }
}
```

Which code fragment, when inserted at line n1, enables the App class to print Equal?

```
O A) String str3 = str2;
     if (str1 == str3)
 OB) if (str1.equalsIgnoreCase(str2))
 CC) String str3 = str2;
     if (str1.equals(str3))
 OD) if (str1.toLowerCase() == str2.toLowerCase())
A. Option A
```

- B. Option B
- C. Option C
- D. Option D

Answer: B

- 42. Which two are benefits of polymorphism?
- A. Faster code at runtime
- B. More efficient code at runtime
- C. More dynamic code at runtime
- D. More flexible and reusable code E. Code that is protected from extension by other classes

Answer: C,D

- 43. Which statement will empty the contents of a StringBuilder variable named sb?
- A. sb.deleteAll();
- B. sb.delete(0, sb.size());
- C. sb.delete(0, sb.length());
- D. sb.removeAll();

Given the code fragment:

What is the result?

- A. Sum is 600
- B. Compilation fails at line n1.
- C. Compilation fails at line n2.
- D. A ClassCastException is thrown at line n1.
- E. A ClassCastException is thrown at line n2.

Answer: E

45

What is the result?

```
    C A) Hello Java SE 8
        Hello Java SE 8
    C B) Hello java.lang.StringBuilder@<<hashcode1>>
        Hello p1.MyString@<<hashcode2>>
    C C) Hello Java SE 8
        Hello p1.MyString@<<hashcode>>
    C D) Compilation fails at the Test class.
```

```
public class App {
    public static void main(String[] args) {
        Boolean[] bool = new Boolean[2];

        bool[0] = new Boolean(Boolean.parseBoolean("true"));
        bool[1] = new Boolean(null);

        System.out.println(bool[0] + " " + bool[1]);
    }
}
```

- A. True false
- B. True null
- C. Compilation fails
- D. A NullPointerException is thrown at runtime

Answer: A

47.

```
public class App (
   String myStr = "7007";

public void doStuff(String str) {
    int myNum = 0;
    try {
       String myStr = str;
       myNum = Integer.parseInt(myStr);
    } catch (NumberFormatException ne) (
       System.err.println("Error");
    }
   System.out.println(
       "myStr: " + myStr + ", myNum: " + myNum);
}

public static void main(String[] args) {
   App obj = new App();
   obj.doStuff("9009");
}
```

What is the result?

A. myStr: 9009, myNum: 9009 B. myStr: 7007, myNum: 7007 C. myStr: 7007, myNum: 9009

D. Compilation fails

```
public class Vowel {
   private char var;
   public static void main(String[] args) {
        char var1 = 'a';
        char var2 = var1;
        var2 = 'e';

        Vowel obj1 = new Vowel();
        Vowel obj2 = obj1;
        obj1.var = 'i';
        obj2.var = 'o';

        System.out.println(var1 + ", " +var2);
        System.out.print(obj1.var + ", " + obj2.var);
    }
}
```

A. a, e i, o B. a, e o, o C. e, e I, o D. e, e o, o

Answer: B

49.

```
class X {
    static int i;
    int j;
    public static void main(String[] args) {
         X \times 1 = new X();
         X \times 2 = \text{new } X();
        x1.i = 3;
         x1.j = 4;
         x2.i = 5;
         x2.j = 6;
         System.out.println(
             x1.i + " " + x1.j + " " +
             x2.i + " " +
             x2.j);
    }
}
```

What is the result?