

Oracle

1Z0-809

Java SE 8 Programmer II

Question: 1

Given the definition of the Vehicle class:

```
Class Vehhicle {  
    int distance;           //line n1  
    Vehicle (int x) {  
        this distance = x;  
    }  
    public void increSpeed(int time) {      //line n2  
        int timeTravel = time;           //line n3  
        class Car {  
            int value = 0;  
            public void speed () {  
                value = distance /timeTravel;  
                System.out.println ("Velocity with new speed"+value+"kmph");  
            }  
        }  
        new Car().speed();  
    }  
}
```

and this code fragment:

```
Vehicle v = new Vehicle (100);
```

```
v.increSpeed(60);
```

What is the result?

- A. Velocity with new speed
- B. A compilation error occurs at line n1.
- C. A compilation error occurs at line n2.
- D. A compilation error occurs at line n3.

Answer: A

Question: 2

Given:

```
IntStream stream = IntStream.of (1,2,3);  
IntFunction<Integer> inFu= x -> y -> x*y;           //line n1  
IntStream newStream = stream.map(inFu.apply(10));   //line n2  
newStream.forEach(System.output::print);
```

Which modification enables the code fragment to compile?

- A. Replace line n1 with:

```
IntFunction<UnaryOperator> inFu = x -> y -> x*y;
```
- B.** Replace line n1 with:

```
IntFunction<IntUnaryOperator> inFu = x -> y -> x*y;
```
- C. Replace line n1 with:

```
BiFunction<IntUnaryOperator> inFu = x -> y -> x*y;
```
- D. Replace line n2 with:

```
System.out.print(y);
```

```
IntStream newStream = stream.map(inFu.applyAsInt (10));
```



Answer: D

Question: 3

Given the code fragment:

```
List<Integer> values = Arrays.asList (1, 2, 3);
values.stream ()
    .map(n -> n*2)          //line n1
    .peek(System.out::print)   //line n2
    .count();
```

What is the result?

- A. 246
- B. The code produces no output.
- C. A compilation error occurs at line n1.
- D. A compilation error occurs at line n2.

Answer: A

Question: 4

Given the code fragment:

```
public class Foo {
    public static void main (String [ ] args) {
        Map<Integer, String> unsortMap = new HashMap<> ( );
        unsortMap.put (10, "z");
        unsortMap.put (5, "b");
        unsortMap.put (1, "d");
        unsortMap.put (7, "e");
        unsortMap.put (50, "j");
        Map<Integer, String> treeMap = new TreeMap <Integer, String> (new
        Comparator<Integer> () {
            @Override public int compare (Integer o1, Integer o2) {return o2.compareTo
            (o1); } });
        treeMap.putAll (unsortMap);
        for (Map.Entry<Integer, String> entry : treeMap.entrySet () ) {
            System.out.print (entry.getValue () + " ");
        }
    }
}
```

What is the result?

- A. A compilation error occurs.
- B. d b e z j
- C. j z e b d
- D. z b d e j

Answer: C

Question: 5

Which two reasons should you use interfaces instead of abstract classes?

- A. You expect that classes that implement your interfaces have many common methods or fields, or require access modifiers other than public.
- B. You expect that unrelated classes would implement your interfaces.
- C. You want to share code among several closely related classes.
- D. You want to declare non-static or non-final fields.
- E. You want to take advantage of multiple inheritance of type.

Answer: A, E

Explanation:

Reference:

<http://www.programmerinterview.com/index.php/java-questions/interface-vs-abstract-class/>

Question: 6

Given:

```
public class Counter {  
    public static void main (String[ ] args) {  
        int a = 10;  
        int b = -1;  
        assert (b >=1) : "Invalid Denominator";  
        int c = a / b;  
        System.out.println (c);  
    }  
}
```

What is the result of running the code with the –ea option?

- A. -10
- B. 0
- C. An AssertionError is thrown.
- D. A compilation error occurs.

Answer: B

Question: 7

Given:

```
class Bird {  
    public void fly () { System.out.print("Can fly"); }  
}  
class Penguin extends Bird {  
    public void fly () { System.out.print("Cannot fly"); }  
}
```

and the code fragment:

```
class Birdie {
```

```

public static void main (String [ ] args) {
    fly( () -> new Bird ( ));
    fly (Penguin :: new);
}
/* line n1 */
}

```

Which code fragment, when inserted at line n1, enables the Birdie class to compile?

- A. static void fly (Consumer<Bird> bird) {
 bird :: fly ();
 }
- B. static void fly (Consumer<? extends Bird> bird) {
 bird.accept() fly ();
 }
- C. static void fly (Supplier<Bird> bird) {
 bird.get() fly ();
 }
- D. static void fly (Supplier<? extends Bird> bird) {
 LOST

Answer: C

NOTE: Very confusing question. There is no logic in the options.

Question: 8

Given:

```

1. abstract class Shape {
2.     Shape () { System.out.println ("Shape");   }
3.     protected void area () { System.out.println ("Shape");   }
4. }
5.
6. class Square extends Shape {
7.     int side;
8.     Square int side {
9.         /* insert code here */
10.        this.side = side;
11.    }
12.    public void area () { System.out.println ("Square");   }
13. }
14. class Rectangle extends Square {
15.     int len, br;
16.     Rectangle (int x, int y) {
17.         /* insert code here */
18.         len = x, br = y;
19.     }
20. void area () { System.out.println ("Rectangle");   }
21. }
```

Which two modifications enable the code to compile?

- A. At line 1, remove abstract

- B. At line 9, insert super ();
C. At line 12, remove public
D. At line 17, insert super (x);
E. At line 17, insert super (); super.side = x;
F. At line 20, use public void area () {

Answer: C 

Question: 9

Given:

```
class Sum extends RecursiveAction {           //line n1
    static final int THRESHOLD_SIZE = 3;
    int stIndex, lstIndex;
    int [ ] data;
    public Sum (int [ ]data, int start, int end) {
        this.data = data;
        this.stIndex = start;
        this.lstIndex = end;
    }
    protected void compute () {
        int sum = 0;
        if (lstIndex - stIndex <= THRESHOLD_SIZE) {
            for (int i = stIndex; i < lstIndex; i++) {
                sum += data [i];
            }
            System.out.println(sum);
        } else {
            new Sum (data, stIndex + THRESHOLD_SIZE, lstIndex).fork();
            new Sum (data, stIndex,
                    Math.min (lstIndex, stIndex + THRESHOLD_SIZE)
                    ).compute ();
        }
    }
}
```

and the code fragment:

```
ForkJoinPool fjPool = new ForkJoinPool ();
int data [ ] = {1, 2, 3, 4, 5, 6, 7, 8, 9, 10}
fjPool.invoke (new Sum (data, 0, data.length));
```

and given that the sum of all integers from 1 to 10 is 55.
Which statement is true?

- A.** The program prints several values that total 55.
B. The program prints 55.
C. A compilation error occurs at line n1.
D. The program prints several values whose sum exceeds 55.

Answer: C

Question: 10

Given:

```
public class Foo<K, V> {  
    private K key;  
    private V value;  
    public Foo (K key, V value) (this.key = key; this.value = value;)  
    public static <T> Foo<T, T> twice (T value) (return new Foo<T, T> (value, value); )  
    public K getKey () (return key;)  
    public V getValue () (return value;)  
}
```

Which option fails?

- A. Foo<String, Integer> mark = new Foo<String, Integer> ("Steve", 100);
- B. Foo<String, String> pair = Foo.<String>twice ("Hello World!");
- C. Foo<?, ?> percentage = new Foo <> (97, 32);
- D. Foo<String, String> grade = new Foo <> ("John", "A");

~~Answer: C~~



Question: 11

Given the code fragment:

```
Stream<List<String>> iStr= Stream.of (  
    Arrays.asList ("1", "John"),  
    Arrays.asList ("2", null));  
Stream<<String> nInSt = iStr.flatMapToInt ((x) -> x.stream ());  
nInSt.forEach (System.out :: print);
```

What is the result?

- A. 1John2null
- B. 12
- C. A NullPointerException is thrown at run time.
- D. A compilation error occurs.

~~Answer: C~~

Question: 12

Given the code fragment:

```
Path file = Paths.get ("courses.txt");  
// line n1
```

Assume the courses.txt is accessible.

Which code fragment can be inserted at line n1 to enable the code to print the content of the courses.txt file?

- A. List<String> fc = Files.list(file);
~~fc.stream().forEach (s -> System.out.println(s));~~
- B. ~~Stream<String> fc = Files.readAllLines (file);~~
~~fc.forEach (s -> System.out.println(s));~~
- C. ~~List<String> fc = readAllLines(file);~~
~~fc.stream().forEach (s -> System.out.println(s));~~

D. Stream<String> fc = Files.lines (file);
fc.forEach (s -> System.out.println(s));

 **Answer: B**



Question: 13

Given the code fragment:

```
public void recDelete (String dirName) throws IOException {  
    File [ ] listOfFiles = new File (dirName) .listFiles();  
    if (listOfFiles != null && listOfFiles.length >0) {  
        for (File aFile : listOfFiles) {  
            if (aFile.isDirectory ()) {  
                recDelete (aFile.getAbsolutePath());  
            } else {  
                if (aFile.getName ().endsWith (".class"))  
                    aFile.delete ();  
            }  
        }  
    }  
}
```

Assume that Projects contains subdirectories that contain .class files and is passed as an argument to the recDelete () method when it is invoked.

What is the result?

- A. The method deletes all the .class files in the Projects directory and its subdirectories.
- B. The method deletes the .class files of the Projects directory only.
- C. The method executes and does not make any changes to the Projects directory.
- D. The method throws an IOException.

~~Answer: B~~

Question: 14

Given the code fragments:

```
4. void doStuff() throws ArithmeticException, NumberFormatException, Exception {  
5.     if (Math.random() >-1 throw new Exception ("Try again");  
6. }  
and  
24. try {  
25.     doStuff ();  
26. } catch (ArithmaticException | NumberFormatException | Exception e) {  
27.     System.out.println (e.getMessage());}  
28. catch (Exception e) {  
29.     System.out.println (e.getMessage());}  
30. }
```

Which modification enables the code to print Try again?

- A. Comment the lines 28, 29 and 30.
- B. Replace line 26 with:

```
    } catch (Exception | ArithmeticException | NumberFormatException e) {  
C. Replace line 26 with:  
    } catch (ArithmeticException | NumberFormatException e) {  
D. Replace line 27 with:  
    throw e;
```

Answer: C

Question: 15

Given the definition of the Country class:

```
public class country {  
    public enum Continent {ASIA, EUROPE}  
    String name;  
    Continent region;  
    public Country (String na, Continent reg) {  
        name = na, region = reg;  
    }  
    public String getName () {return name;}  
    public Continent getRegion () {return region;}  
}
```

and the code fragment:

```
List<Country> couList = Arrays.asList (  
    new Country ("Japan", Country.Continent.ASIA),  
    new Country ("Italy", Country.Continent.EUROPE),  
    new Country ("Germany", Country.Continent.EUROPE));  
Map<Country.Continent, List<String>> regionNames = couList.stream ()  
.collect(Collectors.groupingBy (Country ::getRegion,  
    Collectors.mapping(Country::getName, Collectors.toList())));  
System.out.println(regionNames);
```

What is the output?

- A. {EUROPE = [Italy, Germany], ASIA = [Japan]}
- B. {ASIA = [Japan], EUROPE = [Italy, Germany]}
- C. {EUROPE = [Germany, Italy], ASIA = [Japan]}
- D. {EUROPE = [Germany], EUROPE = [Italy], ASIA = [Japan]}

Answer: A

Question: 16

Given the code fragment:

```
Map<Integer, String> books = new TreeMap<>();  
books.put (1007, "A");  
books.put (1002, "C");  
books.put (1001, "B");  
books.put (1003, "B");  
System.out.println (books);
```

What is the result?

- A. {1007 = A, 1002 = C, 1001 = B, 1003 = B}
- B. {1001 = B, 1002 = C, 1003 = B, 1007 = A}
- C. {1002 = C, 1003 = B, 1007 = A}
- D. {1007 = A, 1001 = B, 1003 = B, 1002 = C}

Answer: D

Question: 17

Given:

```
class Book {  
    int id;  
    String name;  
    public Book (int id, String name) {  
        this.id = id;  
        this.name = name;  
    }  
    public boolean equals (Object obj) {      //line n1  
        boolean output = false;  
        Book b = (Book) obj;  
        if (this.name.equals(b.name))  
            output = true;  
    }  
    return output;  
}  
}  
and the code fragment:
```

```
Book b1 = new Book (101, "Java Programming");  
Book b2 = new Book (102, "Java Programming");  
System.out.println (b1.equals(b2));          //line n2
```

Which statement is true?

- A. The program prints true.
- B. The program prints false.
- C. A compilation error occurs. To ensure successful compilation, replace line n1 with:
boolean equals (Book obj) {
- D. A compilation error occurs. To ensure successful compilation, replace line n2 with:
System.out.println (b1.equals((Object) b2));

Answer: C

Question: 18

Given the content of /resources/Message.properties:

welcome1="Good day!"

and given the code fragment:

```
Properties prop = new Properties ();  
FileInputStream fis = new FileInputStream ("./resources/Message.properties");  
prop.load(fis);  
System.out.println(prop.getProperty("welcome1"));
```

```
System.out.println(prop.getProperty("welcome2", "Test")); //line n1  
System.out.println(prop.getProperty("welcome3"));  
What is the result?
```

- A. Good day!
Test
followed by an Exception stack trace
- B. Good day!
followed by an Exception stack trace
- C. Good day!
Test
null
- D. A compilation error occurs at line n1.

Answer: D

Question: 19

Which action can be used to load a database driver by using JDBC3.0?

- A. Add the driver class to the META-INF/services folder of the JAR file.
- B. Include the JDBC driver class in a jdbc.properties file.
- C. Use the java.lang.Class.forName method to load the driver class.
- D. Use the DriverManager.getDriver method to load the driver class.

Answer: D

Question: 20

Given the code fragment:

```
Path p1 = Paths.get("/Pics/MyPic.jpeg");  
System.out.println(p1.getNameCount() +  
    ":" + p1.getName(1) +  
    ":" + p1.getFileName());
```

Assume that the Pics directory does NOT exist.

What is the result?

- A. An exception is thrown at run time.
- B. 2:MyPic.jpeg: MyPic.jpeg
- C. 1:Pics:/Pics/ MyPic.jpeg
- D. 2:Pics: MyPic.jpeg

Answer: C

Question: 21

Given the code fragments:

```
class MyThread implements Runnable {  
    private static AtomicInteger count = new AtomicInteger (0);
```

```

    public void run () {
        int x = count.incrementAndGet();
        System.out.print (x+” “);
    }
}
and
Thread thread1 = new Thread(new MyThread());
Thread thread2 = new Thread(new MyThread());
Thread thread3 = new Thread(new MyThread());
Thread [] ta = {thread1, thread2, thread3};
for (int x= 0; x < 3; x++) {
    ta[x].start();
}

```

Which statement is true?

- A. The program prints 1 2 3 and the order is unpredictable.
- B. The program prints 1 2 3.
- C. The program prints 1 1 1.
- D. A compilation error occurs.

Answer: B

Question: 22

Given the code fragment:

```

public static void main (String [ ] args) throws IOException {
    BufferedReader br = new BufferedReader (new InputStreamReader (System.in));
    System.out.print (“Enter GDP: ”);
    //line 1
}

```

Which code fragment, when inserted at line 1, enables the code to read the GDP from the user?

- A. int GDP = Integer.parseInt (br.readLine());
- B. int GDP = br.read();
- C. int GDP = br.nextInt();
- D. int GDP = Integer.parseInt (br.next());

Answer: C

Question: 23

Given the code fragment:

```

Path source = Paths.get (“/data/december/log.txt”);
Path destination = Paths.get(“/data”);
Files.copy (source, destination);
and assuming that the file /data/december/log.txt is accessible and contains:
10-Dec-2014 – Executed successfully
What is the result?

```

- A. A file with the name log.txt is created in the /data directory and the content of the /data/december/log.txt file is

- copied to it.
- B. The program executes successfully and does NOT change the file system.
 - C. A FileNotFoundException is thrown at run time.
 - D. A FileAlreadyExistsException is thrown at run time.

Answer: B

Question: 24

Given:

```
class Student {  
    String course, name, city;  
    public Student (String name, String course, String city) {  
        this.course = course; this.name = name; this.city = city;  
    }  
    public String toString() {  
        return course + ":" + name + ":" + city;  
    }  
}
```

and the code fragment:

```
List<Student> stds = Arrays.asList(  
    new Student ("Jessy", "Java ME", "Chicago"),  
    new Student ("Helen", "Java EE", "Houston"),  
    new Student ("Mark", "Java ME", "Chicago"));  
stds.stream()  
    .collect(Collectors.groupingBy(Student::getCourse))  
    .forEach(src, res) -> System.out.println(src);
```

What is the result?

- A. [Java EE: Helen:Houston]
[Java ME: Jessy:Chicago, Java ME: Mark:Chicago]
- B. Java EE
Java ME
- C. [Java ME: Jessy:Chicago, Java ME: Mark:Chicago]
[Java EE: Helen:Houston]
- D. A compilation error occurs.

Answer: C

Question: 25

Given the code fragments:

```
interface CourseFilter extends Predicate<String> {  
    public default boolean test (String str) {  
        return str.equals ("Java");  
    }  
}  
and  
List<String> strs = Arrays.asList("Java", "Java EE", "Java ME");  
Predicate<String> cf1 = s -> s.length() > 3;  
Predicate cf2 = new CourseFilter() {  
    //line n1
```

```

public boolean test (String s) {
    return s.contains ("Java");
}
};

long c = strs.stream()
    .filter(cf1)
    .filter(cf2) //line n2
    .count();
System.out.println(c);
What is the result?

```

- A. 2
- B. 3
- C. A compilation error occurs at line n1.
- D. A compilation error occurs at line n2.

Answer: A

Question: 26

Given:

```

public class Emp {
    String fName;
    String lName;
    public Emp (String fn, String ln) {
        fName = fn;
        lName = ln;
    }
    public String getfName() { return fName; }
    public String getlName() { return lName; }
}

```

and the code fragment:

```

List<Emp> emp = Arrays.asList (
    new Emp ("John", "Smith"),
    new Emp ("Peter", "Sam"),
    new Emp ("Thomas", "Wale"));
emp.stream()
    //line n1
    .collect(Collectors.toList());

```

Which code fragment, when inserted at line n1, sorts the employees list in descending order of fName and then ascending order of lName?

- A. .sorted (Comparator.comparing(Emp::getfName).reserved().thenComparing(Emp::getlName))
- B. .sorted (Comparator.comparing(Emp::getfName).thenComparing(Emp::getlName))
- C. .map(Emp::getfName).sorted(Comparator.reserveOrder())
- D. .map(Emp::getfName).sorted(Comparator.reserveOrder()).map(Emp::getlName).reserved

Answer: A

Question: 27

Given:

```
public enum USCurrency {  
    PENNY (1),  
    NICKLE(5),  
    DIME (10),  
    QUARTER(25);  
    private int value;  
    public USCurrency(int value) {  
        this.value = value;  
    }  
    public int getValue() {return value;}  
}  
public class Coin {  
    public static void main (String[] args) {  
        USCurrency usCoin =new USCurrency.DIME;  
        System.out.println(usCoin.getValue());  
    }  
}
```

Which two modifications enable the given code to compile?

- A. Nest the USCurrency enumeration declaration within the Coin class.
- B. Make the USCurrency enumeration constructor private.
- C. Remove the new keyword from the instantiation of usCoin.
- D. Make the getter method of value as a static method.
- E. Add the final keyword in the declaration of value.

Answer: A, E

Question: 28

Given:

```
class ImageScanner implements AutoCloseable {  
    public void close () throws Exception {  
        System.out.print ("Scanner closed.");  
    }  
    public void scanImage () throws Exception {  
        System.out.print ("Scan.");  
        throw new Exception("Unable to scan.");  
    }  
}  
class ImagePrinter implements AutoCloseable {  
    public void close () throws Exception {  
        System.out.print ("Printer closed.");  
    }  
    public void printImage () {System.out.print("Print.");}  
}
```

and this code fragment:

```
try (ImageScanner ir = new ImageScanner();  
     ImagePrinter iw = new ImagePrinter()) {  
    ir.scanImage();
```

```
    iw.printImage();
} catch (Exception e) {
    System.out.print(e.getMessage());
}
What is the result?
```

- A. Scan.Printer closed. Scanner closed. Unable to scan.
- B. Scan.Scanner closed. Unable to scan.
- C. Scan. Unable to scan.
- D. Scan. Unable to scan. Printer closed.

Answer: B

Question: 29

Given the structure of the STUDENT table:

Student (id INTEGER, name VARCHAR)

Given:

```
public class Test {
    static Connection newConnection = null;
    public static Connection get DBConnection () throws SQLException {
        try (Connection con = DriverManager.getConnection(URL, username, password)) {
            newConnection = con;
        }
        return newConnection;
    }
    public static void main (String [] args) throws SQLException {
        get DBConnection ();
        Statement st = newConnection.createStatement();
        st.executeUpdate("INSERT INTO student VALUES (102, 'Kelvin')");
    }
}
```

Assume that:

- The required database driver is configured in the classpath.
- The appropriate database is accessible with the URL, userName, and passWord exists.
- The SQL query is valid.

What is the result?

- A. The program executes successfully and the STUDENT table is updated with one record.
- B. The program executes successfully and the STUDENT table is NOT updated with any record.
- C. A SQLException is thrown as runtime.
- D. A NullPointerException is thrown as runtime.

Answer: D

Question: 30

Given the code fragments:

```
class Employee {
    Optional<Address> address;
```

```

Employee (Optional<Address> address) {
    this.address = address;
}
public Optional<Address> getAddress() { return address; }
}
class Address {
    String city = "New York";
    public String getCity { return city; }
    public String toString() {
        return city;
    }
}
and
Address address = null;
Optional<Address> addrs1 = Optional.ofNullable (address);
Employee e1 = new Employee (addrs1);
String eAddress = (addrs1.isPresent()) ? addrs1.get().getCity() : "City Not
available";
What is the result?

```

- A. New York
- B. City Not available
- C. null
- D. A NoSuchElementException is thrown at run time.

Answer: C

Question: 31

Given the code fragment:

```

Stream<Path> files = Files.walk(Paths.get(System.getProperty("user.home")));
    files.forEach ( fName -> {                                //line n1
        try {
            Path aPath = fName.toAbsolutePath(); //line n2
            System.out.println(fName + ":"
                + Files.readAttributes(aPath, Basic.File.Attributes.class).creationTime
());
        } catch (IOException ex) {
            ex.printStackTrace();
        });
    }
What is the result?

```

- A. All files and directories under the home directory are listed along with their attributes.
- B. A compilation error occurs at line n1.
- C. The files in the home directory are listed along with their attributes.
- D. A compilation error occurs at line n2.

Answer: A

Question: 32

Given:

```
class Vehicle {  
    int vno;  
    String name;  
    public Vehicle (int vno, String name) {  
        this.vno = vno;  
        this.name = name;  
    }  
    public String toString () {  
        return vno + ":" + name;  
    }  
}
```

and this code fragment:

```
Set<Vehicle> vehicles = new TreeSet <>();  
vehicles.add(new Vehicle (10123, "Ford"));  
vehicles.add(new Vehicle (10124, "BMW"));  
System.out.println(vehicles);
```

What is the result?

- A. 10123 Ford
10124 BMW
- B. 10124 BMW
10123 Ford
- C. A compilation error occurs.
- D. A ClassCastException is thrown at run time.

Answer: B

Question: 33

Given that course.txt is accessible and contains:

Course :: Java

and given the code fragment:

```
public static void main (String[ ] args) {  
    int i;  
    char c;  
    try (FileInputStream fis = new FileInputStream ("course.txt")) {  
        InputStreamReader isr = new InputStreamReader(fis);}  
        while (isr.ready()) { //line n1  
            isr.skip(2);  
            i = isr.read ();  
            c = (char) i;  
            System.out.print(c);  
        }  
    } catch (Exception e) {  
        e.printStackTrace();  
    }  
}
```

What is the result?

- A. ur :: va
- B. ueJa
- C. The program prints nothing.
- D. A compilation error occurs at line n1.

Answer: A

Question: 34

Given:

```
public class Test<T>  {  
    private T t;  
    public T get () {  
        return t;  
    }  
    public void set (T t)  {  
        this.t = t;  
    }  
    public static void main (String args [ ])  {  
        Test<String> type = new Test<>();  
        Test type 1 = new Test ();           //line n1  
        type.set("Java");  
        type1.set(100);                  //line n2  
        System.out.print(type.get() + " " + type1.get());  
    }  
}
```

What is the result?

- A. Java 100
- B. java.lang.String@<hashcode>java.lang.Integer@<hashcode>
- C. A compilation error occurs. To rectify it, replace line n1 with:
 Test<Integer> type1 = new Test<>();
- D. A compilation error occurs. To rectify it, replace line n2 with:
 type1.set (Integer(100));

Answer: C

Question: 35

Given the definition of the Vehicle class:

```
class Vehicle  {  
    String name;  
    void setName (String name)  {  
        this.name = name;  
    }  
    String getName()  {  
        return name;  
    }  
}
```

Which action encapsulates the Vehicle class?

- A. Make the Vehicle class public.
- B. Make the name variable public.
- C. Make the setName method public.
- D. Make the name variable private.
- E. Make the setName method private.
- F. Make the getName method private.

Answer: B

Question: 36

Given:

```
public class Product {  
    int id; int price;  
    public Product (int id, int price) {  
        this.id = id;  
        this.price = price;  
    }  
    public String toString() { return id + ":" + price; }  
}
```

and the code fragment:

```
List<Product> products = Arrays.asList(new Product(1, 10),  
    new Product (2, 30),  
    new Product (2, 30));  
Product p = products.stream().reduce(new Product (4, 0), (p1, p2) -> {  
    p1.price+=p2.price;  
    return new Product (p1.id, p1.price);});  
products.add(p);  
products.stream().parallel()  
.reduce((p1, p2) -> p1.price > p2.price ? p1 : p2)  
.ifPresent(System.out::println);
```

What is the result?

- A. 2 : 30
- B. 4 : 0
- C. 4 : 60
- D. 4 : 60
2 : 30
3 : 20
1 : 10
- E. The program prints nothing.

Answer: D

Question: 37

Given the code fragments:

```
public class Book implements Comparator<Book> {  
    String name;
```

```

        double price;
        public Book () {}
        public Book(String name, double price) {
            this.name = name;
            this.price = price;
        }
        public int compare(Book b1, Book b2) {
            return b1.name.compareTo(b2.name);
        }
        public String toString() {
            return name + ":" + price;
        }
    }
and
List<Book>books = Arrays.asList (new Book ("Beginning with Java", 2), new book ("A
Guide to Java Tour", 3));
    Collections.sort(books, new Book());
    System.out.print(books);

```

What is the result?

- A. [A Guide to Java Tour:3, Beginning with Java:2]
- B. [Beginning with Java:2, A Guide to Java Tour:3]
- C. A compilation error occurs because the Book class does not override the abstract method compareTo().
- D. An Exception is thrown at run time.

Answer: A

Question: 38

Given the code fragment:

```

List<String> listVal = Arrays.asList("Joe", "Paul", "Alice", "Tom");
System.out.println (
    // line n1
);

```

Which code fragment, when inserted at line n1, enables the code to print the count of string elements whose length is greater than three?

- A. listVal.stream().filter(x -> x.length()>3).count()
- B. listVal.stream().map(x -> x.length()>3).count()
- C. listVal.stream().peek(x -> x.length()>3).count().get()
- D. listVal.stream().filter(x -> x.length()>3).mapToInt(x -> x).count()

Answer: C

Question: 39

Given the code fragments:

```

class Caller implements Callable<String> {
    String str;
    public Caller (String s) {this.str=s;}

```

```

        public String call()throws Exception { return str.concat ("Caller");}
    }
class Runner implements Runnable {
String str;
    public Runner (String s) {this.str=s;}
    public void run () { System.out.println (str.concat ("Runner"));}
}
and
public static void main (String[] args) InterruptedException, ExecutionException {
    ExecutorService es = Executors.newFixedThreadPool(2);
    Future f1 = es.submit (new Caller ("Call"));
    Future f2 = es.submit (new Runner ("Run"));
    String str1 = (String) f1.get();
    String str2 = (String) f2.get();           //line n1
    System.out.println(str1+ ":" + str2);
}

```

What is the result?

A. The program prints:

Run Runner

Call Caller : null

And the program does not terminate.

B. The program terminates after printing:

Run Runner

Call Caller : Run

C. A compilation error occurs at line n1.

D. An Execution is thrown at run time.

Answer: A

Question: 40

Given:

```

public class Canvas implements Drawable {
    public void draw () { }
}
public abstract class Board extends Canvas { }
public class Paper extends Canvas {
    protected void draw (int color) { }
}
public class Frame extends Canvas implements Drawable {
    public void resize () { }
}
public interface Drawable {
    public abstract void draw ();
}

```

Which statement is true?

A. Board does not compile.

B. Paper does not compile.

C. Frame does not compile.

- D. Drawable does not compile.
- E. All classes compile successfully.

Answer: B

Question: 41

Given the code fragment:

```
List<String> str = Arrays.asList ("my", "pen", "is", "your", "pen");
Predicate<String> test = s -> {
    int i = 0;
    boolean result = s.contains ("pen");
    System.out.print(i++) + ":");
    return result;
};
str.stream()
    .filter(test)
    .findFirst()
    .ifPresent(System.out ::print);
```

What is the result?

- A. 0 : 0 : pen
- B. 0 : 1 : pen
- C. 0 : 0 : 0 : 0 : pen
- D. 0 : 1 : 2 : 3 : 4 :
- E. A compilation error occurs.

Answer: E

Question: 42

Given the code fragment:

```
List<String> empDetails = Arrays.asList("100, Robin, HR",
                                         "200, Mary, AdminServices",
                                         "101, Peter, HR");
```

```
empDetails.stream()
    .filter(s-> s.contains("1"))
    .sorted()
    .forEach(System.out::println); //line n1
```

What is the result?

- A. 100, Robin, HR
101, Peter, HR
- B. E. A compilation error occurs at line n1.
- C. 100, Robin, HR
101, Peter, HR
200, Mary, AdminServices
- D. 100, Robin, HR
200, Mary, AdminServices
101, Peter, HR

Answer: C

Question: 43

Given:

```
interface Rideable {Car getCar (String name); }  
class Car {  
    private String name;  
    public Car (String name) {  
        this.name = name;  
    }  
}
```

Which code fragment creates an instance of Car?

- A. Car auto = Car ("MyCar"):: new;
- B. Car auto = Car :: new;
 Car vehicle = auto :: getCar("MyCar");
- C. Rideable rider = Car :: new;
 Car vehicle = rider.getCar("MyCar");
- D. Car vehicle = Rideable :: new :: getCar("MyCar");

Answer: C

Question: 44

Which statement is true about the single abstract method of the java.util.function.Function interface?

- A. It accepts one argument and returns void.
- B. It accepts one argument and returns boolean.
- C. It accepts one argument and always produces a result of the same type as the argument.
- D. It accepts an argument and produces a result of any data type.

Answer: C

Explanation:

Reference:

<http://winterbe.com/posts/2014/03/16/java-8-tutorial/> (functions)

Question: 45

Which statement is true about the DriverManager class?

- A. It returns an instance of Connection.
- B. it executes SQL statements against the database.
- C. It only queries metadata of the database.
- D. it is written by different vendors for their specific database.

Answer: A

Explanation: The DriverManager returns an instance of Doctrine\DBAL\Connection which is a wrapper around the underlying driver connection (which is often a PDO instance).

Explanation:

Reference:

<http://doctrine-dbal.readthedocs.org/en/latest/reference/configuration.html>

Question: 46

Given the code fragment:

```
List<Integer> nums = Arrays.asList(10, 20, 8);
```

```
System.out.println(
```

```
    //line n1
```

```
);
```

Which code fragment must be inserted at line n1 to enable the code to print the maximum number in the nums list?

- A. nums.stream().max(Comparator.comparing(a -> a)).get()
- B. nums.stream().max(Integer :: max).get()
- C. nums.stream().max()
- D. nums.stream().map(a -> a).max()

Answer: C

Question: 47

Given:

```
public final class IceCream {  
    public void prepare() {}  
}  
public class Cake {  
    public final void bake(int min, int temp) {}  
    public void mix() {}  
}  
public class Shop {  
    private Cake c = new Cake();  
    private final double discount = 0.25;  
    public void makeReady () { c.bake(10, 120); }  
}  
public class Bread extends Cake {  
    public void bake(int minutes, int temperature) {}  
    public void addToppings() {}  
}
```

Which statement is true?

- A. A compilation error occurs in IceCream.
- B. A compilation error occurs in Cake.
- C. A compilation error occurs in Shop.
- D. A compilation error occurs in Bread
- E. All classes compile successfully.

Answer: D

Question: 48

Which two statements are true about localizing an application?

- A. Support for new regional languages does not require recompilation of the code.
- B. Textual elements (messages and GUI labels) are hard-coded in the code.
- C. Language and region-specific programs are created using localized data.
- D. Resource bundle files include data and currency information.
- E. Language codes use lowercase letters and region codes use uppercase letters.

Answer: A, E

Explanation:

Reference:

<http://docs.oracle.com/javase/7/docs/technotes/guides/intl/>

Question: 49

Which statement is true about java.util.stream.Stream?

- A. A stream cannot be consumed more than once.
- B. The execution mode of streams can be changed during processing.
- C. Streams are intended to modify the source data.
- D. A parallel stream is always faster than an equivalent sequential stream.

Answer: B

Question: 50

The data.doc, data.txt and data.xml files are accessible and contain text.

Given the code fragment:

```
Stream<Path> paths = Stream.of(Paths.get("data.doc"),
    Paths.get("data.txt"),
    Paths.get("data.xml"));
paths.filter(s->s.toString().endsWith("txt")).forEach(
    s -> {
        try {
            Files.readAllLines(s)
                .stream()
                .forEach(System.out::println); //line n1
        } catch (IOException e) {
            System.out.println("Exception");
        }
    }
);
```

What is the result?

- A. The program prints the content of data.txt file.
- B. The program prints:
Exception
<<The content of the data.txt file>>
Exception
- C. A compilation error occurs at line n1.
- D. The program prints the content of the three files.

Answer: D

Question: 51

Given:

```
final class Folder {           //line n1
    //line n2
    public void open () {
        System.out.print("Open");
    }
}
public class Test {
    public static void main (String [] args) throws Exception  {
        try (Folder f = new Folder())  {
            f.open();
        }
    }
}
```

Which two modifications enable the code to print Open Close?

- A. Replace line n1 with:

```
class Folder implements AutoCloseable {
```

- B. Replace line n1 with:

```
class Folder extends Closeable {
```

- C. Replace line n1 with:

```
class Folder extends Exception {
```

- D. At line n2, insert:

```
final void close () {
    System.out.print("Close");
}
```

- E. At line n2, insert:

```
public void close () throws IOException {
    System.out.print("Close");
}
```

Answer: A, C

Question: 52

You want to create a singleton class by using the Singleton design pattern.
Which two statements enforce the singleton nature of the design?

- A. Make the class static.
- B. Make the constructor private.
- C. Override equals() and hashCode() methods of the java.lang.Object class.
- D. Use a static reference to point to the single instance.
- E. Implement the Serializable interface.

Answer: A, B

Question: 53

Given the code fragment:

```
9. Connection conn = DriverManager.getConnection(dbURL, userName, passWord);
10. String query = "SELECT id FROM Employee";
11. try (Statement stmt = conn.createStatement()) {
12.     ResultSet rs = stmt.executeQuery(query);
13.     stmt.executeQuery("SELECT id FROM Customer");
14.     while (rs.next()) {
15.         //process the results
16.         System.out.println("Employee ID: " + rs.getInt("id"));
17.     }
18. } catch (Exception e) {
19.     System.out.println ("Error");
20. }
```

Assume that:

The required database driver is configured in the classpath.

The appropriate database is accessible with the dbURL, userName, and passWord exists.

The Employee and Customer tables are available and each table has id column with a few records and the SQL queries are valid.

What is the result of compiling and executing this code fragment?

- A. The program prints employee IDs.
- B. The program prints customer IDs.
- C. The program prints Error.
- D. compilation fails on line 13.

Answer: D

Question: 54

Given the code fragment:

```
List<Integer> codes = Arrays.asList (10, 20);
UnaryOperator<Double> uo = s -> s +10.0;
codes.replaceAll(uo);
codes.forEach(c -> System.out.println(c));
```

What is the result?

- A. 20.0
30.0
- B. 10
20

- C. A compilation error occurs.
D. A NumberFormatException is thrown at run time.

Answer: A

Question: 55

Given:

```
public class Customer {  
    private String fName;  
    private String lName;  
    private static int count;  
    public customer (String first, String last) {fName = first, lName = last;  
        ++count;}  
    static { count = 0; }  
    public static int getCount() {return count; }  
}  
public class App {  
    public static void main (String [] args) {  
        Customer c1 = new Customer("Larry", "Smith");  
        Customer c2 = new Customer("Pedro", "Gonzales");  
        Customer c3 = new Customer("Penny", "Jones");  
        Customer c4 = new Customer("Lars", "Svenson");  
        c4 = null;  
        c3 = c2;  
        System.out.println (Customer.getCount());  
    }  
}
```

What is the result?

- A. 0
B. 2
C. 3
D. 4
E. 5

Answer: A

Question: 56

Given:

Item table
• ID, INTEGER: PK
• DESCRIPT, VARCHAR(100)
• PRICE, REAL
• QUANTITY< INTEGER

And given the code fragment:

```
9. try {  
10.     Connection conn = DriverManager.getConnection(dbURL, username, password);  
11.     String query = "Select * FROM Item WHERE ID = 110";
```

```

12. Statement stmt = conn.createStatement();
13. ResultSet rs = stmt.executeQuery(query);
14. while(rs.next()) {
15.     System.out.println("ID:      " + rs.getInt("Id"));
16.     System.out.println("Description:    " + rs.getString("Descrip"));
17.     System.out.println("Price:        " + rs.getDouble("Price"));
18.     System.out.println("Quantity:     " + rs.getInt("Quantity"));
19. }
20. } catch (SQLException se) {
21.     System.out.println("Error");
22. }

```

Assume that:

- The required database driver is configured in the classpath.
- The appropriate database is accessible with the dbURL, userName, and passWord exists.
- The SQL query is valid.

What is the result?

- A. An exception is thrown at runtime.
- B. Compilation fails.
- C. The code prints Error.
- D. The code prints information about Item 110.

Answer: C

Question: 57

Given:

```

class Worker extends Thread {
    CyclicBarrier cb;
    public Worker(CyclicBarrier cb) { this.cb = cb; }
    public void run () {
        try {
            cb.await();
            System.out.println("Worker...");
        } catch (Exception ex) { }
    }
}
class Master implements Runnable { //line n1
    public void run () {
        System.out.println("Master...");
    }
}

```

and the code fragment:

```

Master master = new Master();
//line n2
Worker worker = new Worker(cb);
worker.start();

```

You have been asked to ensure that the run methods of both the Worker and Master classes are executed.
Which modification meets the requirement?

- A. At line n2, insert CyclicBarrier cb = new CyclicBarrier(2, master);

- B. Replace line n1 with class Master extends Thread {
- C. At line n2, insert CyclicBarrier cb = new CyclicBarrier(1, master);
- D. At line n2, insert CyclicBarrier cb = new CyclicBarrier(master);

Answer: B

Question: 58

Given the code fragment:

```
String str = "Java is a programming language";
ToIntFunction<String> indexVal = str::indexOf; //line n1
int x = indexVal.applyAsInt("Java");           //line n2
System.out.println(x);
```

What is the result?

- A. 0
- B. 1
- C. A compilation error occurs at line n1.
- D. A compilation error occurs at line n2.

Answer: A

Question: 59

Given the code fragment:

```
List<String> codes = Arrays.asList ("DOC", "MPEG", "JPEG");
codes.forEach (c -> System.out.print(c + " "));
String fmt = codes.stream()
    .filter (s-> s.contains ("PEG"))
    .reduce((s, t) -> s + t).get();
System.out.println("\n" + fmt);
```

What is the result?

- A. DOC MPEG JPEG
MPEGJPEG
- B. DOC MPEG MPEGJPEG
MPEGMPEGJPEG
- C. MPEGJPEG
MPEGJPEG
- D. The order of the output is unpredictable.

Answer: A

Question: 60

Given the code fragment:

```
List<String> nL = Arrays.asList("Jim", "John", "Jeff");
Function<String, String> funVal = s -> "Hello : ".contact(s);
nL.Stream()
```

```
.map(funVal)
.peek(System.out::print);
```

What is the result?

- A. Hello : Jim Hello : John Hello : Jeff
- B. Jim John Jeff
- C. The program prints nothing.
- D. A compilation error occurs.

Answer: D

Question: 61

Given:

```
public interface Moveable<Integer> {
    public default void walk (Integer distance) {System.out.println("Walking");}
    public void run(Integer distance);
}
```

Which statement is true?

- A. Moveable can be used as below:

```
Moveable<Integer> animal = n -> System.out.println("Running" + n);
animal.run(100);
animal.walk(20);
```

- B. Moveable can be used as below:

```
Moveable<Integer> animal = n -> n + 10;
animal.run(100);
animal.walk(20);
```

- C. Moveable can be used as below:

```
Moveable animal = (Integer n) -> System.out.println(n);
animal.run(100);
Moveable.walk(20);
```

- D. Movable cannot be used in a lambda expression.

Answer: B

Question: 62

Which two code blocks correctly initialize a Locale variable?

- A. Locale loc1 = "UK";
- B. Locale loc2 = Locale.getInstance("ru");
- C. Locale loc3 = Locale.getLocaleFactory("RU");
- D. Locale loc4 = Locale.UK;
- E. Locale loc5 = new Locale ("ru", "RU");

Answer: D, E

Question: 63

Given:

```
class FuelNotAvailException extends Exception { }
class Vehicle {
    void ride() throws FuelNotAvailException {      //line n1
        System.out.println("Happy Journey!");
    }
}
class SolarVehicle extends Vehicle {
    public void ride () throws Exception {           //line n2
        super ride ();
    }
}
```

and the code fragment:

```
public static void main (String[] args) throws FuelNotAvailException, Exception {
    Vehicle v = new SolarVehicle ();
    v.ride();
}
```

Which modification enables the code fragment to print Happy Journey!?

- A. Replace line n1 with public void ride() throws FuelNotAvailException {
- B. Replace line n1 with protected void ride() throws Exception {
- C. Replace line n2 with void ride() throws Exception {
- D. Replace line n2 with private void ride() throws FuelNotAvailException {

Answer: B

Question: 64

Given the definition of the Emp class:

```
public class Emp
{
    private String eName;
    private Integer eAge;

    Emp(String eN, Integer eA) {
        this.eName = eN;
        this.eAge = eA;
    }
    public Integer getEAge () {return eAge;}
    public String getEName () {return eName;}
}
```

and code fragment:

```
List<Emp>li = Arrays.asList(new Emp("Sam", 20), New Emp("John", 60), New Emp("Jim", 51));
Predicate<Emp> agVal = s -> s.getEAge() > 50;          //line n1
li = li.stream().filter(agVal).collect(Collectors.toList());
Stream<String> names = li.stream()map.(Emp::getEName);   //line n2
names.forEach(n -> System.out.print(n + "));
```

What is the result?

- A. Sam John Jim
- B. John Jim

- C. A compilation error occurs at line n1.
- D. A compilation error occurs at line n2.

Answer: A

Question: 65

For which three objects must a vendor provide implementations in its JDBC driver?

- A. Time
- B. Date
- C. Statement
- D. ResultSet
- E. Connection
- F. SQLException
- G. DriverManager

Answer: C, D, E

Explanation: Database vendors support JDBC through the JDBC driver interface or through the ODBC connection. Each driver must provide implementations of `java.sql.Connection`, `java.sql.Statement`, `java.sql.PreparedStatement`, `java.sql.CallableStatement`, and `java.sql.ResultSet`. They must also implement the `java.sql.Driver` interface for use by the generic `java.sql.DriverManager` interface.

Question: 66

Given the code fragment:

```
LocalDate valentinesDay = LocalDate.of(2015, Month.FEBRUARY, 14);
LocalDate nextYear = valentinesDay.plusYears(1);
nextYear.plusDays(15); //line n1
System.out.println(nextYear);
What is the result?
```

- A. 2016-02-14
- B. A DateTimeException is thrown.
- C. 2016-02-29
- D. A compilation error occurs at line n1.

Answer: B

Question: 67

Given the code fragment:

```
BiFunction<Integer, Double, Integer> val = (t1, t2) -> t1 + t2;      //line n1
System.out.println(val.apply(10, 10.5));
What is the result?
```

- A. 20
- B. 20.5

- C. A compilation error occurs at line n1.
- D. A compilation error occurs at line n2.

Answer: C

Question: 68

Which statement is true about java.time.Duration?

- A. It tracks time zones.
- B. It preserves daylight saving time.
- C. It defines time-based values.
- D. It defines date-based values.

Answer: C

Explanation:

Reference:

<http://tutorials.jenkov.com/java-date-time/duration.html#accessing-the-time-of-a-duration>

Question: 69

Given the code fragment:

```
UnaryOperator<Integer> uo1 = s -> s*2;           line n1
List<Double> loanValues = Arrays.asList(1000.0, 2000.0);
loanValues.stream()
    .filter(lv -> lv >= 1500)
    .map(lv -> uo1.apply(lv))
    .forEach(s -> System.out.print(s + " "));
```

What is the result?

- A. 4000.0
- B. 4000
- C. A compilation error occurs at line n1.
- D. A compilation error occurs at line n2.

Answer: B

Question: 70

You have been asked to create a ResourceBundle which uses a properties file to localize an application.
Which code example specifies valid keys of menu1 and menu2 with values of File Menu and View Menu?

- A. <key name = 'menu1">File Menu</key>
<key name = 'menu2">View Menu</key>
- B. <key>menu1</key><value>File Menu</value>
<key>menu2</key><value>View Menu</value>
- C. menu1, File Menu, menu2, View Menu
- D. menu1 = File Menu

menu2 = View Menu

Answer: B

Question: 71

Given the records from the Employee table:

eid	ename
111	Tom
112	Jerry
113	Donald

and given the code fragment:

```
try {  
    Connection conn = DriverManager.getConnection (URL, userName, passWord);  
    Statement st = conn.createStatement(ResultSet.TYPE_SCROLL_INSENSITIVE,  
                                         ResultSet.CONCUR_UPDATABLE);  
    st.execute("SELECT*FROM Employee");  
    ResultSet rs = st.getResultSet();  
    while (rs.next()) {  
        if (rs.getInt(1) ==112) {  
            rs.updateString(2, "Jack");  
        }  
        rs.absolute(2);  
        System.out.println(rs.getInt(1) + " " + rs.getString(2));  
    } catch (SQLException ex) {  
        System.out.println("Exception is raised");  
    }  
}
```

Assume that:

The required database driver is configured in the classpath.

The appropriate database accessible with the URL, userName, and passWord exists.

What is the result?

A. The Employee table is updated with the row:

112 Jack

and the program prints:

112 Jerry

B. The Employee table is updated with the row:

112 Jack

and the program prints:

112 Jack

C. The Employee table is not updated and the program prints:

112 Jerry

D. The program prints Exception is raised.

Answer: D

Question: 72

Given:

```
class RateOfInterest {  
    public static void main (String[] args) {  
        int rateOfInterest = 0;  
        String accountType = "LOAN";  
        switch (accountType) {  
            case "RD";  
                rateOfInterest = 5;  
                break;  
            case "FD";  
                rateOfInterest = 10;  
                break;  
            default:  
                assert false: "No interest for this account"; //line n1  
        }  
        System.out.println ("Rate of interest:" + rateOfInterest);  
    }  
}
```

and the command:

```
java -ea RateOfInterest
```

What is the result?

- A. Rate of interest: 0
- B. An AssertionError is thrown.
- C. No interest for this account
- D. A compilation error occurs at line n1.

Answer: C

Question: 73

Given the code fragment:

```
class CallerThread implements Callable<String> {  
    String str;  
    public CallerThread(String s) {this.str=s;}  
    public String call() throws Exception {  
        return str.concat("Call");  
    }  
}  
and  
public static void main (String[] args) throws InterruptedException, ExecutionException  
{  
    ExecutorService es = Executors.newFixedThreadPool(4); //line n1  
    Future f1 = es.submit (newCallerThread("Call"));  
    String str = f1.get().toString();  
    System.out.println(str);  
}
```

Which statement is true?

- A. The program prints Call Call and terminates.
- B. The program prints Call Call and does not terminate.

- C. A compilation error occurs at line n1.
D. An ExecutionException is thrown at run time.

Answer: B

Question: 74

Given the code fragment:

```
public class FileThread implements Runnable {  
    String fName;  
    public FileThread(String fName) { this.fName = fName; }  
    public void run () System.out.println(fName);  
    public static void main (String[] args) throws IOException, InterruptedException {  
        ExecutorService executor = Executors.newCachedThreadPool();  
        Stream<Path> listOfFiles = Files.walk(Paths.get("Java Projects"));  
        listOfFiles.forEach(line -> {  
            executor.execute(new FileThread(line.getFileName().toString())); //  
line n1  
        });  
        executor.shutdown();  
        executor.awaitTermination(5, TimeUnit.DAYS); //  
line n2  
    }  
}
```

The Java Projects directory exists and contains a list of files.

What is the result?

- A. The program throws a runtime exception at line n2.
B. The program prints files names concurrently.
C. The program prints files names sequentially.
D. A compilation error occurs at line n1.

Answer: A

Question: 75

Given:

```
class CheckClass {  
    public static int checkValue (String s1, String s2) {  
        return s1.length() - s2.length();  
    }  
}
```

and the code fragment:

```
String[] strArray = new String [] {"Tiger", "Rat", "Cat", "Lion"}  
//line n1  
for (String s : strArray) {  
    System.out.print (s + " ");  
}
```

Which code fragment should be inserted at line n1 to enable the code to print Rat Cat Lion Tiger?

- A. Arrays.sort(strArray, CheckClass :: checkValue);
- B. Arrays.sort(strArray, (CheckClass :: new) :: checkValue);
- C. Arrays.sort(strArray, (CheckClass :: new).checkValue);
- D. Arrays.sort(strArray, CheckClass :: new :: checkValue);

Answer: D

Question: 76

Given the code fragments:

```
class TechName {  
    String techName;  
    TechName (String techName) {  
        this.techName=techName;  
    }  
}
```

and

```
List<TechName> tech = Arrays.asList (   
    new TechName("Java-"),  
    new TechName("Oracle DB-"),  
    new TechName("J2EE-")  
);
```

```
Stream<TechName> stre = tech.stream();
```

//line n1

Which should be inserted at line n1 to print Java-Oracle DB-J2EE-?

- A. stre.forEach(System.out::print);
- B. stre.map(a-> a.techName).forEach(System.out::print);
- C. stre.map(a-> a).forEachOrdered(System.out::print);
- D. stre.forEachOrdered(System.out::print);

Answer: C

Question: 77

Given that /green.txt and /colors/yellow.txt are accessible, and the code fragment:

```
Path source = Paths.get("/green.txt");  
Path target = Paths.get("/colors/yellow.txt");  
Files.move(source, target, StandardCopyOption.ATOMIC_MOVE);  
Files.delete(source);
```

Which statement is true?

- A. The green.txt file content is replaced by the yellow.txt file content and the yellow.txt file is deleted.
- B. The yellow.txt file content is replaced by the green.txt file content and an exception is thrown.
- C. The file green.txt is moved to the /colors directory.
- D. A FileAlreadyExistsException is thrown at runtime.

Answer: D

Question: 78

Given:

```
interface Doable {  
    public void doSomething (String s);  
}
```

Which two class definitions compile?

- A.

```
public abstract class Task implements Doable {  
    public void doSomethingElse(String s)  { }  
}
```
- B.

```
public abstract class Work implements Doable {  
    public abstract void doSomething(String s)  { }  
    public void doYourThing(Boolean b)  { }  
}
```
- C.

```
public class Job implements Doable {  
    public void doSomething(Integer i)  { }  
}
```
- D.

```
public class Action implements Doable {  
    public void doSomething(Integer i)  { }  
    public String doThis(Integer j)  { }  
}
```
- E.

```
public class Do implements Doable {  
    public void doSomething(Integer i)  { }  
    public void doSomething(String s)  { }  
    public void doThat (String s)  { }  
}
```

Answer: C, D

Question: 79

Given the code fragment:

```
List<Integer> list1 = Arrays.asList(10, 20);  
List<Integer> list2 = Arrays.asList(15, 30);  
//line n1
```

Which code fragment, when inserted at line n1, prints 10 20 15 30?

- A.

```
Stream.of(list1, list2)  
    .flatMap(list -> list.stream())  
    .forEach(s -> System.out.print(s + " "));
```
- B.

```
Stream.of(list1, list2)  
    .flatMap(list -> list.intStream())  
    .forEach(s -> System.out.print(s + " "));
```
- C.

```
list1.stream()  
    .flatMap(list2.stream().flatMap(e1 -> e1.stream())  
    .forEach(s -> System.out.println(s + " "));
```
- D.

```
Stream.of(list1, list2)  
    .flatMapToInt(list -> list.stream())  
    .forEach(s -> System.out.print(s + " "));
```

Answer: C

Question: 80

Given the code fragment:

```
public static void main (String[] args) throws IOException {  
    BufferedReader brCopy = null;  
    try (BufferedReader br = new BufferedReader (new FileReader("employee.txt"))){ //  
line n1  
        br.lines().forEach(c -> System.out.println(c));  
        brCopy = br;           //line n2  
    }  
    brCopy.ready(); //line n3;  
}
```

Assume that the ready method of the BufferedReader, when called on a closed BufferedReader, throws an exception, and employee.txt is accessible and contains valid text.

What is the result?

- A. A compilation error occurs at line n3.
- B. A compilation error occurs at line n1.
- C. A compilation error occurs at line n2.
- D. The code prints the content of the employee.txt file and throws an exception at line n3.

Answer: B

Question: 81

Given:

Book.java:

```
public class Book {  
    private String read(String bname) { return "Read" + bname }  
}
```

EBook.java:

```
public class EBook extends Book {  
    public class String read (String url) { return "View" + url }  
}
```

Test.java:

```
public class Test {  
    public static void main (String[] args) {  
        Book b1 = new Book();  
        b1.read("Java Programming");  
        Book b2 = new EBook();  
        b2.read("http://ebook.com/ebook");  
    }  
}
```

What is the result?

- A. Read Java Programming
View http:/ ebook.com/ebook

- B. Read Java Programming
Read <http://ebook.com/ebook>
C. The EBook.java file fails to compile.
D. The Test.java file fails to compile.

Answer: D

Question: 82

Given the code fragment:

```
ZonedDateTime depart = ZonedDateTime.of(2015, 1, 15, 3, 0, 0, 0, ZoneId.of("UTC-7"));
ZonedDateTime arrive = ZonedDateTime.of(2015, 1, 15, 9, 0, 0, 0, ZoneId.of("UTC-5"));
long hrs = ChronoUnit.HOURS.between(depart, arrive); //line n1
System.out.println("Travel time is" + hrs + "hours");
```

What is the result?

- A. Travel time is 4 hours
- B. Travel time is 6 hours
- C. Travel time is 8 hours
- D. An exception is thrown at line n1.

Answer: D

Question: 83

Given the code fragment:

```
Path path1 = Paths.get("/app/.sys/");
Path res1 = path1.resolve("log");
Path path2 = Paths.get("/server/exe/");
Path res2 = path1.resolve("/readme/");
System.out.println(res1);
System.out.println(res2);
```

What is the result?

- A. /app/sys/log
/readme/server/exe
- B. /app/log/sys
/server/exe/readme
- C. /app/.sys/log
/readme
- D. /app/.sys/log
/server/exe/readme

Answer: D

Question: 84

Given the code fragment:

```
List<String> colors = Arrays.asList("red", "green", "yellow");
```

```
Predicate<String> test = n -> {
    System.out.println("Searching...");
    return n.contains("red");
};
colors.stream()
    .filter(c -> c.length() > 3)
    .allMatch(test);
```

What is the result?

- A. Searching...
- B. Searching...
- Searching...
- C. Searching...
- Searching...
- D. A compilation error occurs.

Answer: D

Question: 85

Given:

```
class UserException extends Exception { }
class AgeOutOfBoundsException extends UserException { }
and the code fragment:
class App {
    public void doRegister(String name, int age)
        throws UserException, AgeOutOfBoundsException {
        if (name.length () < 6) {
            throw new UserException ();
        } else if (age >= 60) {
            throw new AgeOutOfBoundsException ();
        } else {
            System.out.println("User is registered.");
        }
    }
    public static void main(String[ ] args) throws UserException {
        App t = new App ();
        t.doRegister("Mathew", 60);
    }
}
```

What is the result?

- A. User is registered.
- B. An AgeOutOfBoundsException is thrown.
- C. A UserException is thrown.
- D. A compilation error occurs in the main method.

Answer: A

Question: 86

Given:

```
public class MainMethod {  
    void main() {  
        System.out.println("one");  
    }  
    static void main(String args) {  
        System.out.println("two");  
    }  
    public static void main(String[] args) {  
        System.out.println("three");  
    }  
    void mina(Object[] args) {  
        System.out.println("four");  
    }  
}
```

What is printed out when the program is executed?

- A. one
- B. two
- C. three
- D. four

Answer: C

Question: 87

Given:

```
public class ScopeTest {  
    int j, int k;  
    public static void main(String[] args) {  
        new ScopeTest().doStuff(); }  
    void doStuff() {  
        int x = 5;  
        doStuff2();  
        System.out.println("x");  
    }  
    void doStuff2() {  
        int y = 7;  
        System.out.println("y");  
        for (int z = 0; z < 5; z++) {  
            System.out.println("z");  
            System.out.println("y");  
        }  
    }  
}
```

Which two items are fields?

- A. j
- B. k
- C. x

- D. y
- E. z

Answer: A, B

Question: 88

A method is declared to take three arguments. A program calls this method and passes only two arguments. What are the results?

- A. Compilation fails.
- B. The third argument is given the value null.
- C. The third argument is given the value void.
- D. The third argument is given the value zero.
- E. The third argument is given the appropriate falsy value for its declared type. F) An exception occurs when the method attempts to access the third argument.

Answer: A

Question: 89

```
public class ForTest {  
    public static void main(String[] args) {  
        int[] arrar = {1,2,3};  
        for ( foo ) {  
        }  
        }  
    }
```

Which three are valid replacements for foo so that the program will compile and run?

- A. int i: array
- B. int i = 0; i < 1; i++
- C. ;;
- D. ; i < 1; i++
- E. ; i < 1;

Answer: A, B, C

Question: 90

Given:

```
public class SampleClass {  
    public static void main(String[] args) {  
        AnotherSampleClass asc = new AnotherSampleClass(); SampleClass sc = new SampleClass();  
        sc = asc;  
        System.out.println("sc: " + sc.getClass());  
        System.out.println("asc: " + asc.getClass());  
    }  
}  
class AnotherSampleClass extends SampleClass {
```

```
}
```

What is the result?

- A. sc: class Object
asc: class AnotherSampleClass
- B. sc: class SampleClass
asc: class AnotherSampleClass
- C. sc: class AnotherSampleClass
asc: class SampleClass
- D. sc: class AnotherSampleClass
asc: class AnotherSampleClass

Answer: D

Question: 91

Given the code fragment:

```
int b = 3;  
if ( !(b > 3)) {  
    System.out.println("square ");  
}  
System.out.println("circle ");  
}  
System.out.println("...");
```

What is the result?

- A. square...
- B. circle...
- C. squarecircle...
- D. Compilation fails.

Answer: C

Question: 92

What is the proper way to define a method that takes two int values and returns their sum as an int value?

- A. int sum(int first, int second) { first + second; }
- B. int sum(int first, second) { return first + second; }
- C. sum(int first, int second) { return first + second; }
- D. int sum(int first, int second) { return first + second; }
- E. void sum (int first, int second) { return first + second; }

Answer: D

Question: 93

Which two are Java Exception classes?

- A. SercurityException
- B. DuplicatePathException
- C. IllegalArgumentException
- D. TooManyArgumentsException

Answer: A, C

Question: 94

Given the for loop construct:

```
for ( expr1 ; expr2 ; expr3 ) {  
    statement;  
}
```

Which two statements are true?

- A. This is not the only valid for loop construct; there exists another form of for loop constructor.
- B. The expression expr1 is optional. It initializes the loop and is evaluated once, as the loop begins.
- C. When expr2 evaluates to false, the loop terminates. It is evaluated only after each iteration through the loop.
- D. The expression expr3 must be present. It is evaluated after each iteration through the loop.

Answer: B, C

Explanation:

The for statement have this forms:

```
for (init-stmt; condition; next-stmt) {  
    body  
}
```

There are three clauses in the for statement.

The init-stmt statement is done before the loop is started, usually to initialize an iteration variable.

The condition expression is tested before each time the loop is done. The loop isn't executed if the boolean expression is false (the same as the while loop).

The next-stmt statement is done after the body is executed. It typically increments an iteration variable.

Incorrect answers:

A: A try for a counter-example:

```
for (int 1 : a) {  
}
```

This is a correct statement. However, Expr2 and Expr3 are here empty expressions, so it is still in the format defined above.

Question: 95

```
public class StringReplace {  
    public static void main(String[] args) {  
        String message = "Hi everyone!";  
        System.out.println("message = " + message.replace("e", "X"));  
    }  
}
```

What is the result?

- A. message = Hi everyone!
- B. message = Hi XvXryonX!
- C. A compile time error is produced.
- D. A runtime error is produced.
- E. message =
- F. message = Hi Xeveryone!

Answer: B

Question: 96

Which two statements are true for a two-dimensional array?

- A. It is implemented as an array of the specified element type.
- B. Using a row by column convention, each row of a two-dimensional array must be of the same size.
- C. At declaration time, the number of elements of the array in each dimension must be specified.
- D. All methods of the class Object may be invoked on the two-dimensional array.

Answer: A, D

Question: 97

Which three statements are benefits of encapsulation?

- A. Allows a class implementation to change without changing the clients
- B. Protects confidential data from leaking out of the objects
- C. Prevents code from causing exceptions
- D. Enables the class implementation to protect its invariants
- E. Permits classes to be combined into the same package
- F. Enables multiple instances of the same class to be created safely

Answer: A, B, D

Question: 98

The protected modifier on a Field declaration within a public class means that the field _____.

- A. Cannot be modified
- B. Can be read but not written from outside the class
- C. Can be read and written from this class and its subclasses only within the same package
- D. Can be read and written from this class and its subclasses defined in any package

Answer: D

Explanation:

Reference:

<http://beginnersbook.com/2013/05/java-access-modifiers/>

Question: 99

Given:

Given:

```
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
- C.Compilation fails
- D.An exception is thrown at runtime

Answer: B

Question: 100

Given:

```
public class X implements Z {
    public String toString() {
        return "X ";
    }
    public static void main(String[] args) {
        Y myY = new Y();
        X myX = myY;
        Z myZ = myX;
        System.out.print(myX);
        System.out.print((Y)myX);
        System.out.print(myZ);
    }
}

class Y extends X {
    public String toString() {
        return "Y ";
    }
}
```

- A. XX
- B. XYX
- C. YYX
- D. YYY

Answer: D

Question: 101

Given:

```

class Alpha {
    int ns;
    static int s;
    Alpha(int ns) {
        if (s < ns) {
            s = ns;
            this.ns = ns;
        }
    }
    void doPrint() {
        System.out.println("ns = " + ns + " s = " + s);
    }
}

```

And,

```

public class TestA {
    public static void main(String[] args) {
        Alpha ref1 = new Alpha(50);
        Alpha ref2 = new Alpha(125);
        Alpha ref3 = new Alpha(100);
        ref1.doPrint();
        ref2.doPrint();
        ref3.doPrint();
    }
}

```

- A. ns = 50 S = 125
ns = 125 S = 125
ns = 100 S = 125
- B. ns = 50 S = 125
ns = 125 S = 125
ns = 0 S = 125
- C. ns = 50 S = 50
ns = 125 S = 125
ns = 100 S = 100
- D. ns = 50 S = 50
ns = 125 S = 125
ns = 0 S = 125

Answer: B

Question: 102

Given:

Class A {}

Class B {}

Interface X {}

Interface Y {}

Which two definitions of class C are valid?

- A. Class C extends A implements X {}
- B. Class C implements Y extends B {}

- C.Class C extends A, B { }
- D.Class C implements X, Y extends B { }
- E.Class C extends B implements X, Y { }

Answer: AE

extends is for extending a class.

implements is for implementing an interface.
Java allows for a class to implement many interfaces.

Question: 103

Given the code fragment

```
class Test2 {  
    int fvar;  
    static int cvar;  
    public static void main(String[] args) {  
        Test2 t = new Test2();  
        // insert code here to write field variables  
    }  
}
```

Which code fragments, inserted independently, enable the code compile?

- A. t.fvar = 200;
- t.cvar = 400;
- B.fvar = 200;
- cvar = 400;
- C.this.fvar = 200;
- this.cvar = 400;
- D.t.fvar = 200;
- Test2.cvar = 400;
- E.this.fvar = 200;
- Test2.cvar = 400;

Answer: B

Question: 104

View the exhibit.

```

class MissingInfoException extends Exception { }
class AgeOutOfRangeException extends Exception { }

class Candidate {
    String name;
    int age;
    Candidate(String name, int age) throws Exception {
        if (name == null) {
            throw new MissingInfoException();
        } else if (age <= 10 || age >= 150) {
            throw new AgeOutOfRangeException();
        } else {
            this.name = name;
            this.age = age;
        }
    }
    public String toString() {
        return name + " age: " + age;
    }
}

```

Given the code fragment:

```

4. public class Test {
5.     public static void main(String[] args) {
6.         Candidate c = new Candidate("James", 20);
7.         Candidate c1 = new Candidate("Williams", 32);
8.         System.out.println(c);
9.         System.out.println(c1);
10.    }
11. }

```

Which change enables the code to print the following?

James age: 20

Williams age: 32

- A. Replacing line 5 with `public static void main (String [] args) throws MissingInfoException, AgeOutOfRangeException { }`
- B. Replacing line 5 with `public static void main (String [] args) throws.Exception { }`
- C. Enclosing line 6 and line 7 within a try block and adding:
`catch(Exception e1) { //code goes here}`
`catch (missingInfoException e2) { //code goes here}`
`catch (AgeOutOfRangeException e3) { //code goes here}`
- D. Enclosing line 6 and line 7 within a try block and adding:
`catch (missingInfoException e2) { //code goes here}`
`catch (AgeOutOfRangeException e3) { //code goes here}`

Answer: C

Question: 105

Given:

```

public class Test {

    static void dispResult(int[] num) {
        try {
            System.out.println(num[1] / (num[1] - num[2]));
        } catch(ArithmetricException e) {
            System.err.println("first exception");
        }
        System.out.println("Done");
    }

    public static void main(String[] args) {
        try {
            int[] arr = {100, 100};
            dispResult(arr);
        } catch(IllegalArgumentException e) {
            System.err.println("second exception");
        } catch(Exception e) {
            System.err.println("third exception");
        }
    }
}

```

What is the result?

- A. 0
- Done
- B.First Exception
- Done
- C.Second Exception
- D.Done
- Third Exception
- E.Third Exception

Answer: B

Question: 106

Given the code format:

```

class DBConfiguration {
    String user;
    String password;
}

```

And:

```

4. public class DBHandler {
5.     DBConfiguration configureDB(String uname, String password) {
6.         // insert code here
7.     }
8.     public static void main(String[] args) {
9.         DBHandler r = new DBHandler();
10.        DBConfiguration dbConf = r.configureDB("manager", "manager");
11.    }
12. }

```

Which code fragment must be inserted at line 6 to enable the code to compile?

- A. DBConfiguration f;
- return f;
- B.Return DBConfiguration;

- C.Return new DBConfiguration;
D.Return 0;

Answer: B

Question: 107

Given:

```
class Test {  
    int sum = 0;  
    public void doCheck(int number) {  
        if (number % 2 == 0) {  
            break;  
        } else {  
            for (int i = 0; i < number; i++) {  
                sum += i;  
            }  
        }  
    }  
    public static void main(String[] args) {  
        Test obj = new Test();  
        System.out.println("Red " + obj.sum);  
        obj.doCheck(2);  
        System.out.println("Orange " + obj.sum);  
        obj.doCheck(3);  
        System.out.println("Green " + obj.sum);  
    }  
}
```

What is the result?

- A. Red 0
Orange 0
Green 3
B.Red 0
Orange 0
Green 6
C.Red 0
Orange 1
D.Green 4
E.Compilation fails

Answer: E

Question: 108

Given the code fragment:

```
String color = "teal";

switch (color) {
    case "Red":
        System.out.println("Found Red");
    case "Blue":
        System.out.println("Found Blue");
        break;
    case "Teal":
        System.out.println("Found Teal");
        break;
    default:
        System.out.println("Found Default");
}
```

What is the result?

- A. Found Red
- Found Default
- B. Found Teal
- C. Found Red
- Found Blue
- Found Teal
- D. Found Red
- Found Blue
- Found Teal
- Found Default
- E. Found Default

Answer: B

Question: 109

Given:

```

Given:
class X {
    public void mX() {
        System.out.println("Xm1");
    }
}
class Y extends X {
    public void mX() {
        System.out.println("Xm2");
    }
    public void mY() {
        System.out.println("Ym");
    }
}

public class Test {
    public static void main(String[] args) {
        X xRef = new Y();
        Y yRef = (Y) xRef;
        yRef.mY();
        xRef.mX();
    }
}

```

- A. Ym
 Xm2
 B.Ym
 Xm1
 C.Compilation fails
 D.A ClassCastException is thrown at runtime

Answer: B

Question: 110

Given:

```

public class Test2 {
    public static void main(String[] args) {
        int ar1[] = {2, 4, 6, 8};
        int ar2[] = {1, 3, 5, 7, 9};
        ar2 = ar1;
        for (int e2 : ar2) {
            System.out.print(" " + e2);
        }
    }
}

```

What is the result?

- A. 2 4 6 8

- B.2 4 6 8 9
C.1 3 5 7
D.1 3 5 7 9

Answer: D

Question: 111

Given:

```
public class MyFor1 {  
    public static void main(String[] args) {  
        int[] x = {6, 7, 8};  
        for (int i : x) {  
            System.out.print(i + " ");  
            i++;  
        }  
    }  
}
```

What is the result?

- A. 6 7 8
B.7 8 9
C.0 1 2
D.6 8 10
E.Compilation fails

Answer: A

Question: 112

Given:

```
public class Calculator {  
    public static void main(String[] args) {  
        int num = 5;  
        int sum;  
  
        do {  
            sum += num;  
        } while ((num--) > 1);  
  
        System.out.println("The sum is " + sum + ".");  
    }  
}
```

What is the result?

- A. The sum is 2
B.The sum is 14
C.The sum is 15
D.The loop executes infinite times
E.Compilation fails

Answer: E

Question: 113

Given:

```
package p1;
public interface DoInterface {
    void m1(int n);                                // line n1
    public void m2(int n);
}

package p3;
import p1.DoInterface;
public class DoClass implements DoInterface{
    int x1, x2;
    DoClass(){
        this.x1 = 0;
        this.x2 = 10;
    }
    public void m1(int p1) { x1+=p1; System.out.println(x1); }      // line n2
    public void m2(int p1) { x2+=p1; System.out.println(x2); }
}

package p2;
import p1.*;
import p3.*;
class Test {
    public static void main(String[] args){           // line n3
        DoInterface doi= new DoClass();
        doi.method1(100);
        doi.method2(200);
    }
}
```

What is the result?

- A. 100
210
- B.Compilation fails due to an error in line n1
- C.Compilation fails due to an error at line n2
- D.Compilation fails due to an error at line n3

Answer: C

Question: 114

Given:

```

public class TestTry {
    public static void main(String[] args) {
        StringBuilder message = new StringBuilder("hello java!");
        int pos = 0;
        try {
            for (pos = 0; pos < 12; pos++) {
                switch (message.charAt(pos)) {
                    case 'a':
                    case 'e':
                    case 'o':
                        String uc=Character.toString(message.charAt(pos)).toUpperCase();
                        message.replace(pos, pos+1, uc);
                }
            }
        } catch (Exception e) {
            System.out.println("Out of limits");
        }
        System.out.println(message);
    }
}

```

What is the result?

- A. hEllojAvA!
- B. Hello java!
- C. Out of limits
- hEllojAvA!
- D. Out of limits

Answer: C

Question: 115

Given:

```

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

Question: 116

Given the code fragment:

```
int[] lst = {1, 2, 3, 4, 5, 4, 3, 2, 1};  
int sum = 0;  
for (int frnt = 0, rear = lst.length - 1;  
     frnt < 5 && rear >= 5;  
     frnt++, rear--) {  
    sum = sum + lst[frnt] + lst[rear];  
}  
System.out.print(sum);
```

What is the result?

- A. 20
- B. 25
- C. 29
- D. Compilation fails
- E. An `ArrayIndexOutOfBoundsException` is thrown at runtime

Answer: A

Question: 117

Given:

```
public class X {  
    public static void main(String[] args) {  
        String theString = "Hello World";  
        System.out.println(theString.charAt(11));  
    }  
}
```

What is the result?

- A. The program prints nothing
- B. d
- C. A `StringIndexOutOfBoundsException` is thrown at runtime.
- D. An `ArrayIndexOutOfBoundsException` is thrown at runtime.
- E. A `NullPointerException` is thrown at runtime.

Answer: C

Question: 118

Which two statements are true for a two-dimensional array of primitive data type?

- A. It cannot contain elements of different types.
- B. The length of each dimension must be the same.
- C. At the declaration time, the number of elements of the array in each dimension must be specified.
- D. All methods of the class object may be invoked on the two-dimensional array.

Answer: CD

Question: 119

Given the code fragment:

```
String[] colors = {"red", "blue", "green", "yellow", "maroon", "cyan"};
```

Which code fragment prints blue, cyan, ?

- C A)

```
for (String c:colors){  
    if (c.length() != 4) {  
        continue;  
    }  
    System.out.print(c+", ");  
}
```
- C B)

```
for (String c:colors[]) {  
    if (c.length() <= 4) {  
        continue;  
    }  
    System.out.print(c+", ");  
}
```
- C C)

```
for (String c:String[] colors) {  
    if (c.length() >= 3) {  
        continue;  
    }  
    System.out.print(c+", ");  
}
```
- C D)

```
for (String c:colors){  
    if (c.length() != 4) {  
        System.out.print(c+", ");  
        continue;  
    }  
}
```

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

Answer: A

Question: 120

Given:

```

public class MyFor3 {
    public static void main(String[] args) {
        int[] xx = null;
        for (int ii : xx) {
            System.out.println(ii);
        }
    }
}

```

What is the result?

- A. Null
- B. Compilation fails
- C. An exception is thrown at runtime
- D. 0

Answer: C

Question: 121

Given:

```

public class Test3 {
    public static void main(String[] args) {
        String names[] = new String[3];
        names[0] = "Mary Brown";
        names[1] = "Nancy Red";
        names[2] = "Jessy Orange";
        try {
            for(String n: names) {
                try {
                    String pwd = n.substring(0, 3)+n.substring(6, 10);
                    System.out.println(pwd);
                }
                catch(StringIndexOutOfBoundsException sie) {
                    System.out.println("string out of limits");
                }
            }
            catch(ArrayIndexOutOfBoundsException e) {
                System.out.println("array out of limits");
            }
        }
    }
}

```

What is the result?

- A. Marrown
String out of limits
JesOran
- B. Marrown
String out of limits
Array out of limits
- C. Marrown
String out of limits
D. Marrown
NanRed
JesOran

Answer: A

Question: 122

Given:

```
public abstract class Shape {  
    private int x;  
    private int y;  
    public abstract void draw();  
    public void setAnchor(int x, int y) {  
        this.x = x;  
        this.y = y;  
    }  
}
```

Which two classes use the shape class correctly?

- A)

```
public class Circle implements Shape {  
    private int radius;  
}
```
- B)

```
public abstract class Circle extends Shape {  
    private int radius;  
}
```
- C)

```
public class Circle extends Shape {  
    private int radius;  
    public void draw();  
}
```
- D)

```
public abstract class Circle implements Shape {  
    private int radius;  
    public void draw();  
}
```
- E)

```
public class Circle extends Shape {  
    private int radius;  
    public void draw() /* code here */  
}
```
- F)

```
public abstract class Circle implements Shape {  
    private int radius;  
    public void draw() /* code here */  
}
```

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

Answer: BE

When an abstract class is subclassed, the subclass usually provides implementations for all of the abstract methods in its parent class (E). However, if it does not, then the subclass must also be declared abstract (B).

Note: An abstract class is a class that is declared abstract—it may or may not include abstract methods. Abstract classes cannot be instantiated, but they can be subclassed.

Question: 123

Given the class definitions:

```
class Alpha {
    public String doStuff(String msg) {
        return msg;
    }
}
class Beta extends Alpha {
    public String doStuff(String msg) {
        return msg.replace('a', 'e');
    }
}
class Gamma extends Beta {
    public String doStuff(String msg) {
        return msg.substring(2);
    }
}
```

And the code fragment of the main() method,

```
12. List<Alpha> strs = new ArrayList<Alpha>();
13. strs.add(new Alpha());
14. strs.add(new Beta());
15. strs.add(new Gamma());
16. for (Alpha t : strs) {
17.     System.out.println(t.doStuff("Java"));
18. }
```

What is the result?

- A. Java
- Java
- Java
- B.Java
- Jeve
- va
- C.Java
- Jeve
- ve
- D.Compilation fails

Answer: D

Question: 124

Given:

```
public class Msg {  
    public static String doMsg(char x) {  
        return "Good Day!";  
    }  
    public static String doMsg(int y) {  
        return "Good Luck!";  
    }  
    public static void main(String[] args) {  
        char x = 8;  
        int z = '8';  
        System.out.println(doMsg(x));  
        System.out.print(doMsg(z));  
    }  
}
```

What is the result?

- A. Good Day!
Good Luck!
- B.Good Day!
Good Day!
- C.Good Luck!
Good Day!
- D.Good Luck!
Good Luck!
- E.Compilation fails

Answer: E

Question: 125

Which two items can legally be contained within a java class declaration?

- A. An import statement
- B. A field declaration
- C. A package declaration
- D. A method declaration

Answer: BD

Explanation:

Reference:

<http://docs.oracle.com/javase/tutorial/java/javaOO/methods.html>

Question: 126

Given the fragments:

```

public class TestA extends Root {
    public static void main(String[] args) {
        Root r = new TestA();
        System.out.println(r.method1());          // line n1
        System.out.println(r.method2());          // line n2
    }
}

class Root {
    private static final int MAX = 20000;
    private int method1() {
        int a = 100 + MAX;                      // line n3
        return a;
    }
    protected int method2() {                  // line n4
        int a = 200 + MAX;
        return a;
    }
}

```

Which line causes a compilation error?

- A. Line n1
- B. Line n2
- C. Line n3
- D. Line n4

Answer: A

Question: 127

Given:

```

public class Case {
    public static void main(String[] args) {
        String product = "Pen";
        product.toLowerCase();
        product.concat(" BOX").toLowerCase();
        System.out.print(product.substring(4, 6));
    }
}

```

What is the result?

- A. box
- B. nbo
- C. bo
- D. nb
- E. An exception is thrown at runtime

Answer: E

Question: 128

Given the code fragments:

```
interface Contract{ }
class Super implements Contract{ }
class Sub extends Super {}

public class Ref {
    public static void main(String[] args) {
        List objs = new ArrayList();

        Contract c1 = new Super();                                // line n1
        Contract c2 = new Sub();
        Super s1 = new Sub();

        objs.add(c1);
        objs.add(c2);                                         // line n2
        objs.add(s1);

        for(Object itm: objs) {
            System.out.println(itm.getClass().getName());
        }
    }
}
```

What is the result?

- A. Super
- Sub
- Sub
- B.Contract
- Contract
- Super
- C.Compilation fails at line n1
- D.Compilation fails at line n2

Answer: D
