

Test: JP Java Programming Final Exam

Section 5

1. **True or False:** Java 7 requires you create an instance of `java.nio.file.File` class.
 - A. True
 - B. False
2. Which of these construct a `DataInputStream` instance?
 - A. `New dataInputStream("java.txt");`
 - B. `New dataInputStream(new file("java.txt"));`
 - C. `New dataInputStream(new FileInputStream("java.txt"));`
 - D. `New dataInputStream(new InputStream("java.txt"));`
 - E. `New dataInputStream(new writer("java.txt"));`
3. The `Files` class can perform which of the following functions?
 - A. Creates files
 - B. Navigates the file system
 - C. Works across disk volumes
 - D. Works with absolute paths
 - E. Works with relative paths
4. Which of the following is an absolute Windows path?
 - A. `/`
 - B. `/home/user/username`
 - C. `\Users\UserName\data`
 - D. `C:\Users\UserName\data`
 - E. `Data`

5. The `System.out` is what type of stream?
- A. A `BufferedReader` stream
 - B. A `BufferedWriter` stream
 - C. A `PrintStream`
 - D. A `Reader` stream
 - E. An `OutputStream`
6. The `BufferedOutputStream` is a direct subclass of what other class?
- A. `DigestOutputStream`
 - B. `FilterOutputStream`
 - C. `ObjectOutputStream`
 - D. `OutputStream`
 - E. `PrintStream`
7. When you delete files, directories, or links with the `delete(Path p)` method which of the following exceptions can occur.
- A. `DirectoryNotEmptyException`
 - B. `IOException`
 - C. `NoSuchFileException`
 - D. All of the above
 - E. None of the above
8. **True or False:** The `Paths` class provides a static `get()` method to find a valid `Path`.
- A. True
 - B. False
9. Which of the following static methods is not provided by the `Files` class to check file properties or duplication?
- A. `Files.isArchived(Path p);`
 - B. `Files.isHidden(Path p);`
 - C. `Files.isReadable(Path p);`
 - D. `Files.isWritable(Path p);`

10. How would you make an instance of `Car` in a class that didn't import the `vehicle` package below?

```
package vehicle;
public class Car{
    public Car(){}
}
```

- A. `Car c = new Car();`
- B. `vehicle.Car c=new Car();`
- C. `vehicle.Car c=new vehicle.Car();`
- D. `vehicle.Car c=new vehicle();`
- E. None of the above

11. **True or False:** If a class is in a package, the system's `CLASSPATH` must be altered to access the class.

- A. True
- B. False

12. **True or False:** An example of two tier architecture would be a client application working with a server application.

- A. True
- B. False

13. Which of the following are files that must be uploaded to a web server to deploy a Java application/applet? (Choose Three)

- A. `.java` files
- B. HTML files
- C. `.jar` files
- D. JNLP files
- E. SQL files

14. Which of the following is an attribute of a three tier architecture application?

- A. An application of that type has a client and server only
- B. A complex application that includes a client, a server and database
- C. An application of that type runs on a single computer
- D. All of the above
- E. None of the above

Section 6

15. Which of the following is the correct statement be inserted at `//INSERT CODE` location that calls the database-stored procedure `sayHello`?

```
class Test{
public static void main(String[] args) {
    try {
        Connection conn = getConnection();
        //INSERT CODE
        cstat.setString(1, "Hello");
        cstat.registerOutParameter(2, Types.NUMERIC);
        cstat.setInt(2, 10);
    }
    catch(SQLException e){}
    }
}
```

- A. `CallableStatement cstat = con.prepareCall("{call procedure_sayHello (?, ?)}");`
- B. `CallableStatement cstat = con.prepareCall("{call sayHello}");`
- C. `CallableStatement cstat = con.prepareCall("{call sayHello(?, ?)}");`
- D. `CallableStatement cstat = con.prepareCall("{sayHello(?, ?)}");`
- E. `CallableStatement cstat = con.prepareCall("sayHello(?, ?)");`

16. **True or False:** JDBC has a type system that can control the conversion between Oracle database types and Java types.

- A. True
- B. False

17. Which symbol is used as a placeholder to pass parameters to a `PreparedStatement` or `CallableStatement`?

- A. !
- B. @
- C. #
- D. ?

18. Which of the following can fill in the `//INSERT HERE` correctly?

```
ResultSet rset = stmt.executeQuery(sqlQuery);  
if(rs.next()){  
    //INSERT HERE  
}
```

- A. `Object s = rs.getObject(1);`
- B. `String s = rs.getObject(0);`
- C. `String s = rs.getString(0);`
- D. `String s = rs.getString(1);`

19. From JDBC, how would you execute DML statements (i.e. insert, delete, update) in the database?

- A. By invoking the `DeleteStatement` or `UpdateStatement` JDBC object
- B. By invoking the `execute(...)` or `executeUpdate(...)` method of a JDBC `Statement` object or sub-interface object
- C. By invoking the `executeDelete(...)`, `executeUpdate(...)` methods of the `DataStatement`
- D. By making use of the `execute(...)` statement from `DataStatement` Object

20. Given the following code, assume there are rows of data in the table EMP. What is the result?

```
1. Connection conn = new Connection(URL);  
2. Statement stmt = conn.createStatement();  
3. ResultSet result = stmt.executeQuery("select count(*) from EMP");  
4. if(rs.next()){  
5. System.out.println(rs.getInt(1));  
6. }
```

- A. 0
- B. 2
- C. Compiler error on line 1
- D. Compiler error on line 2
- E. Runtime error on line 3

21. Which of the following is the correct order to close the database object?

- A. Connection, Statement, ResultSet
- B. ResultSet, Connection, Statement
- C. ResultSet, Statement, Connection
- D. Statement, Connection, ResultSet
- E. Statement, ResultSet, Connection

22. What type of JDBC driver will convert the database invocation directly into network protocol?

- A. Type 1 driver
- B. Type 2 driver
- C. Type 3 driver
- D. Type 4 driver

23. How many categories of JDBC drivers are there?

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

Section 7

24. The function of Garbage Collection in Java is:
- A. As a Java programmer, we have to call the GC function specifically in order to manage the Java Memory
 - B. Memory occupied by objects with no reference is automatically reclaimed for reuse
 - C. The JVM GC deletes all unused Java files on the system
 - D. The JVM uses GC to clear the program output
25. Which of following statements describes Parallel and Serial Garbage collection?
- A. A Parallel garbage collector uses multiple threads to manage heap space
 - B. A Parallel garbage collector uses multiple threads to manage stack space
 - C. A Serial garbage collector uses multiple threads to manage heap space
 - D. A Serial garbage collector uses multiple threads to manage stack space

26. Given the following code snippet:

```
String str = new String("Hello");
```

The `str` variable will be located in which memory area in the JVM during runtime?

- A. `str` will stay in the heap area of the constant pool run-time data area in the JVM
 - B. `str` will stay in the heap area of the run-time data area in the JVM
 - C. `str` will stay in the method area of the run-time data area in the JVM
 - D. `str` will stay in the stack area of the run-time data area in the JVM
27. Given the following output from the Minor GC:

```
[PSYoungGen: 9200K->1008K(9216K)] 9980K->3251K(19456K), 0.0045753  
secs] [Times:user=0.03 sys=0.03, real=0.00 secs]
```

Which of the following statements is TRUE?

- A. The pause time spent in GC is 0.03
- B. The size of the entire heap is 19456k
- C. The size of the tenured space is 19456k
- D. This is a major garbage collection process

28. **True or False:** One of the primary goals of the Java platform is to provide an interpreted, just-in-time run time environment.
- A. True
 - B. False
29. Which of the following statements describe the Java programming language?
- A. Java is a high-level programming language
 - B. Java is an object oriented programming language
 - C. The Java programming language includes a garbage collection feature
 - D. All of the above
 - E. None of the above
30. Which of the following statements is NOT true of the Java programming language?
- A. A `.class` file contains platform independent bytecode
 - B. All source code is written in plain text files with the extension `.java`
 - C. Java source code files are compiled into `.class` files by the `javac` command
 - D. The `javac` command can be used to run a Java application
31. Which of the following statements describe Java technology?
- A. It is a deployment environment
 - B. It is a development environment
 - C. It is a programming language
 - D. All of the above
 - E. None of the above
32. Which of the following converts a human-readable file into a platform-independent code file in Java?
- A. `java` command
 - B. `javac` command
 - C. JDK
 - D. JRE

Section 8

33. Which of the following commands allows a developer to see the effects of a running java application on memory and CPU?
- A. java
 - B. javac
 - C. javap
 - D. jvisualvm
34. **True or False:** HotSpot has an HSDIS plugin to allow disassembly of code.
- A. True
 - B. False
35. Which of the following commands can be used to monitor the Java Virtual Machine statistics?
- A. javap
 - B. javac
 - C. jmap
 - D. jstat
36. Which of the following commands can be used to translate Java source code into bytecode?
- A. java
 - B. javac
 - C. jdb
 - D. jstat
37. Which of the following statements is NOT TRUE for the `jdb` command?
- A. `jdb` can display the source code
 - B. `jdb` can dump the stack of the current thread
 - C. `jdb` can set the break point for the program
 - D. `jdb` can track the GC activity of the program

38. The bytecode for a Java method is located in which structure in the Java class file?

- A. `access_flags`
- B. `magic`
- C. `major_version`
- D. `method_info`

39. Given the following class structure:

```
public class Shape{  
    void foo(){}  
}  
public class Circle extends Shape{  
    void draw(){}  
}
```

Which of the following statements is TRUE?

- A. If a `Circle` object is instantiated, the constructor of `Circle` will call the constructor of `Shape`
- B. The `Circle` class contains both the `foo` and `draw` method definitions
- C. The `foo` method definition appears in the `Circle` class
- D. The `foo` method definition is only contained in the `Shape` class

40. Given the following declaration of the method test:

```
public static void test(String s, int i);
```

Which of the following is the descriptor of the test method in the `class` file?

- A. `(java/lang/String;int)V`
- B. `(Ljava/lang/String;I)V`
- C. `(Ljava/lang/String;java.lang.Integer)V`
- D. `V(Ljava/lang/String;I)`

41. **True or False:** Like in the Java source code file, one Java class file can contain multiple class definitions.

- A. True
- B. False

Section 9

42. Choose which opcode is used to fetch a field from object.
- A. bipush
 - B. getfield
 - C. idc
 - D. istore
 - E. pop
43. **True or False:** Bytecode is an intermediate representation of a program, somewhere between source code and machine code.
- A. True
 - B. False
44. Which of the following opcode instructions would add 2 integer variables?
- A. +
 - B. add
 - C. addi
 - D. iadd
45. **True or False:** Bytecode contains different opcodes for every type of loop written in source code.
- A. True
 - B. False

46. Which of the following statements is NOT TRUE for the `Class.forName("HelloClass")` method? (Choose three)

```
public class Foo{  
    public void test(){  
        Class.forName("HelloClass");  
    }  
}
```

- A. In this example, the `Class.forName("HelloClass")` will use the `ClassLoader` which loads the `Foo` class
- B. The `forName` method will instantiate a `HelloClass` object
- C. The `forName()` method does not initialize the `HelloClass`
- D. The `forName()` method does not load the `HelloClass` class into the Java Runtime
- E. The `forName()` method returns the `Class` object associated with the `HelloClass`

47. **True or False:** The same class cannot be loaded by the JVM more than one time.

- A. True
- B. False

48. **True or False:** `.class` files are loaded into memory all at once when a Java application is launched.

- A. True
- B. False

49. **True or False:** The Java developer can define a number of additional or custom `classloaders`.

- A. True
- B. False

50. The process of linking involves which of the following processes?

- A. Preparation
- B. Resolution
- C. Verification
- D. All of the above
- E. None of the above