MOCK TEST 3

BATCH -37

Name: _____
Batch No: _____
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MCQS

1) Which of the following option leads to the portability and security of Java? A

a. **Bytecode is executed by JVM**

b. The applet makes the Java code secure and portable

c. Use of exception handling

d. Dynamic binding between objects

2) What will be the output of the following program? D

```
public class MyFirst {
    public static void main(String[] args) {
      MyFirst obj = new MyFirst(n);
}
static int a = 10;
static int n;
int b = 5;
int c;
public MyFirst(int m) {
    System.out.println(a + ", " + b + ", " + c + ", " + n + ", " + m);
  }
// Instance Block
 {
   b = 30;
   n = 20;
```

```
 }
// Static Block
 static
{
        a = 60;
    }
 }
```

a)10, 5, 0, 20, 0

b)10, 30, 20

c)60, 5, 0, 20

d)60, 30, 0, 20, 0

Answer: (d) 60, 30, 0, 20, 0

Explanation: In the above code, there are two values of variable a, i.e., 10 and 60. Similarly, there are two values of variable b, i.e., 5 and 30. But in the output, the values of a and b are 60 and 30, respectively. It is because of the execution order of the program.

The execution order of the program is that the static block executes first, then instance block, and then constructor. Hence, the JVM will consider the value of a and b as 60 and 30 concerning the execution order. The value of a = 10 and b = 5 are of no use. And the value of variables c and m is 0 as we have not assigned any value to them.

Hence, the correct answer is an option (d).

3) Which of the following is a valid declaration of a char? A

a. **char ch = '\utea';**

b. char ca = 'tea';

c. char cr = \u0223;

d. char cc = '\itea';

4) What is the return type of the hashCode() method in the Object class? B

a. Object

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b. int

c. long

d. void

5) Which of the following for loop declaration is not valid? A

a. for (int i = 99; i >= 0; i / 9)

b. for (int i = 7; i <= 77; i += 7)

c. for (int i = 20; i >= 2; - -i)

d. for (int i = 2; i <= 20; i = 2* i)

6) In which process, a local variable has the same name as one of the instance variables?

a. Serialization

b. Variable Shadowing

c. Abstraction

d. Multi-threading

Answer: (b) Variable Shadowing

Explanation: There are following reasons for considering a variable shadowing, they are listed below:

- When we define a variable in a local scope with a variable name same as the name of a variable defined in an instance scope.
- When a subclass declares a variable with the same name as of the parent class variable.
- When a method is overridden in the child class.

Hence, the correct answer is option (b).

7) What do you mean by nameless objects?

a. An object created by using the new keyword.

b. An object of a superclass created in the subclass.

c. An object without having any name but having a reference.

d. An object that has no reference.

Answer: (d) An object that has no reference.

Explanation: The nameless objects are basically referred to as anonymous objects. The anonymous objects do not have any names. We can also say that, when an object is initialized but is not assigned to any reference variable, it is called an anonymous object. For example, new Employee();.

e. If we assign it to a reference variable like,
f. *Employee emp = new Employee();*
g. In the above code, emp is a reference variable. Therefore, the above object is not anonymous, as it is assigned to a reference variable.
h. Hence, the correct answer is option (d).

8) An interface with no fields or methods is known as a _____.

a. Runnable Interface
b. Marker Interface
c. Abstract Interface
d. CharSequence Interface

Answer: (b) Marker Interface
Explanation: An interface with no methods and fields is known as the marker interface. In other words, an empty interface (containing no fields and methods) is called a marker interface. In Java, the most commonly used marker interfaces are Serializable, Cloneable, Remote, and ThreadSafe interfaces. Marker interfaces are also known as the Tag interface. It is used to tell the JVM or compiler that the particular class has special behavior.
Following is the code snippet of a maker interface:

```
public interface Cloneable
{
  // empty
}
```

Hence, the correct answer is option (b).

9) Which option is false about the *final* keyword?

a. A *final* method cannot be overridden in its subclasses.
b. A *final* class cannot be extended.
c. A *final* class cannot extend other classes.
d. A *final* method can be inherited.

Answer: (c) A final class cannot extend other classes.
Explanation: The *final* is a reserved keyword in Java that is used to make a variable, method, and class immutable. The important features of the *final* keyword are:

- Using the final keyword with a variable makes it constant or immutable. We can't reassign the values of it.
- A final variable must be a local variable and cannot be used in other classes.
- Using the final keyword with a method makes it constant, and we can't override it in the subclass.
- Using final with a class makes the class constant, and we cannot extend a final class. But a final class can extend other classes.

Hence, the correct answer is option (c).

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10) In which memory a String is stored, when we create a string using new operator?

a. Stack
b. String memory
c. Heap memory
d. Random storage space

Answer: (c) Heap memory

Explanation: When a String is created using a new operator, it always created in the heap memory. Whereas when we create a string using double quotes, it will check for the same value as of the string in the string constant pool. If it is found, returns a reference of it else create a new string in the string constant pool.

Hence, the correct answer is option (c).

11) What is the use of the intern() method?

a. It returns the existing string from memory
b. It creates a new string in the database
c. It modifies the existing string in the database
d. None of the above

(a) It returns the existing string from the memory

Explanation: The intern() method is used to return the existing strings from the database. In other words, the intern() method returns a reference of the string. For example, if the string constant pool already has a string object with the same value, the intern() method will return a reference of the string from the pool.

Hence, the correct answer is option (a).

12) Which of the following is a reserved keyword in Java?

a. object
b. strictfp
c. main
d. system

Answer: (b) strictfp

Explanation: In the above options, strictfp is the only reserved keyword of Java. The strictfp keyword is a modifier that restricts the floating-point calculations to assure portability and it was added in Java version 1.2. The objects are referring to those variables that are created using the new operator. In Java, main is the method that is the entry point of any program, and the System is a class. Hence, the correct answer is option (b).

13) Which keyword is used for accessing the features of a package?

a. package
b. import
c. extends
d. export

Answer: (b) import

Explanation: The import keyword is used to access the classes and interfaces of a particular package to the current file. In other words, it is used to import the user-defined and built-in classes and interfaces into the source file of java so that the current file can easily access the other packages by directly using its name. For example,

```
import java.awt.*;
import java.lang.Object;
```

The first import statement imports all the classes and interfaces of java.awt package. Whereas, the second import statement only imports the Object class of the java.lang package.

The package keyword is used to create a new package. The extends keyword indicates that the new class is derived from the base or parent class using inheritance, and export is not a keyword in Java.

Hence, the correct answer is option (b).

14) In java, jar stands for_____.

a. Java Archive Runner
b. Java Application Resource
c. Java Application Runner
d. None of the above

Answer: (d) None of the above

Explanation: A Java ARchive (JAR) is a package file format used to combine all the metadata and resources into a single file. In other words, it is a file that contains several components, which make up a self-contained, executable, and deployable jar used to execute Java applications and deploy Java applets.

Hence, the correct answer is option (d).

15) Which of the given methods are of Object class?

a. notify(), wait(long msecs), and synchronized()
b. wait(long msecs), interrupt(), and notifyAll()
c. notify(), notifyAll(), and wait()

d. sleep(long msecs), wait(), and notify()

Answer: (c) notify(), notifyAll(), and wait()

Explanation: The notify(), notifyAll(), and wait() are the methods of the Object class. The notify() method is used to raise a single thread that is waiting on the object's monitor. The notifyAll() method is similar to the notify() method, except that it wakes up all the threads that are waiting on the object's monitor. The wait() method is used to make a thread to wait until another thread invokes the notify() or notifyAll() methods for an object.

Hence, the correct answer is option (c).

16) Which of the following is a valid syntax to synchronize the HashMap?

a. Map m = hashMap.synchronizeMap();
b. HashMap map =hashMap.synchronizeMap();
c. Map m1 = Collections.synchronizedMap(hashMap);
d. Map m2 = Collection.synchronizeMap(hashMap);

Answer: (c) Map m1 = Collections.synchronizedMap(hashMap);

Explanation: By default, the HashMap class is a non-synchronized collection class. The need for synchronization is to perform thread-safe operations on the class. To synchronize the HashMap class explicitly, we should use the Collections.synchronizedMap(hashMap) method that returns a thread-safe map object.

Hence, the correct answer is option (c).

17) Which of the following is a mutable class in java?

a. java.lang.String
b. java.lang.Byte
c. java.lang.Short
d. java.lang.StringBuilder

Answer: (d) java.lang.StringBuilder

Explanation: A mutable class is a class in which changes can be made after its creation. We can modify the internal state and fields of a mutable class. The StringBuilder class is a mutable class, as it can be altered after it is created.

The String, Byte, and Short are immutable classes as they cannot be altered once they are created.

Hence, the correct answer is option (d).

18) What is meant by the classes and objects that dependents on each other?

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a. Tight Coupling
b. Cohesion
c. Loose Coupling
d. None of the above

Answer: (a) Tight Coupling

Explanation: In tight coupling, a group of classes and objects are highly dependent on each other. Tight coupling is also used in some cases, like when an object creates some other objects that are going to be used by them.

Tight coupling is the correct answer as it is used when the logic of one class is called by the logic of another class.

Hence, the correct option is (a).

19) What is the result of the following program?

```
public static synchronized void main(String[] args) throws

InterruptedException {

    Thread f = new Thread();

     f.start();

     System.out.print("A");

     f.wait(1000);

     System.out.print("B");

}
```

a. It prints A and B with a 1000 seconds delay between them
b. It only prints A and exits
c. It only prints B and exits
d. A will be printed, and then an exception is thrown.

Answer: (d) A will be printed, and then an exception is thrown.

Explanation: The InterruptedException is thrown when a thread is waiting, sleeping, or occupied. The output of the above code is shown below:

```
A
Exception in thread "main" java.lang.IllegalMonitorStateException
```

```
at java.lang.Object.wait(Native Method)
at com.app.java.B.main(B.java:9)
```

In the above code, we have created a thread "f," and when started, A will be printed.After that, the thread will wait for 1000 seconds. Now, an exception is thrown instead of printing B. It is because the wait() method must be used inside a synchronized block or try-catch block unless it will throw an exception, as shown above.

Hence, the correct option is option (d).

20) What is the purpose of the PATH environment variable in Java?

- A.To locate Java libraries
- B.To store Java bytecode
- **C. To Locate the exe files (.exe)**
- D.To optimize Java code

Answer: C. To Locate the exe files (.exe)