SDJ INTERNATIONAL COLLEGE

SYBCA SEM-4 Java Programming (403)

Short Question Answer

2018 March-April

1. **Define Monitor.**
   Each object has lock in java and Monitor is used to manage the lock. Key to synchronization is the concept of the monitor (also called a semaphore). Only one thread can own a monitor at a given time.

2. **How can we create an object of interface?**
   You can't create Object of interface.

3. **What is JVM?**
   JVM (Java Virtual Machine) is an abstract machine. It is a specification that provides runtime environment in which java byte code can be executed.
   JVMs are available for many hardware and software platforms (i.e. JVM is platform dependent).

4. **Differentiate paint and repaint() method.**

paint()	**repaint()**
The paint() method is called when some action is performed on the window.	Whenever a repaint method is called, the update method is also called along with paint() method.
This method supports painting via graphics object.	This method is used to cause paint() to be invoked by the AWT painting thread.

5. **List out any 4 built in package with brief description.**
   Java.lang, java.util, java.io, java.awt, java.net, java.applet

6. **Java is robust-Justify.**

Java is Robust because it is highly supported language. It is portable across many Operating systems. **Java** also has feature of Automatic memory management and garbage collection. Strong type checking mechanism of **Java** also helps in making **Java Robust**.

7. **Write significance of CLASSPATH.**
   Classpath is a parameter in the Java Virtual Machine or the Java compiler that specifies the location of user-defined classes and packages. The parameter may be set either on the command-line, or through an environment variable.

2017-Mar-Apr

1. **What is byte code?**
   Bytecode is nothing but the intermediate representation of Java source code which is produced by the Java compiler by compiling that source code. This byte code is an machine independent code. It is not an completely a compiled code but it is an intermediate code.

2. **How mutex can be achieved in thread?**
   When you have a multi-threaded application, the different threads sometimes share a common resource, such as a variable or similar. This shared source often cannot be accessed at the same time, so a construct is needed to ensure that only one thread is using that resource at a time.
   The concept is called "mutual exclusion" (short Mutex), and is a way to ensure that only one thread is allowed inside that area, using that resource etc.
   The most popular way of achieving thread synchronization is by using **Mutexes**.

3. **Explain the keyword equivalent to go to statement in Java .**
   In java goto keyword is not used. In place of goto we used break in java.
   Syntax:-
   break label:
   label can be any variable but not java keyword. label is followed by colon.

4. **differentiate >> and >>>**
   >> (right shift)
   Binary Right Shift Operator. The left operands value is moved right by the number of bits specified by the right operand.
   If a=60 and b=13 then
   Example: A >> 2 will give 15 which is 1111

   >>> (zero fill right shift)
   Shift right zero fill operator. The left operands value is moved right by the number of bits specified by the right operand and shifted values are filled up with zeros.
   Example: A >>>2 will give 15 which is 0000 1111

5. **How default access modifier is different than public modifier?**
   - When no access modifier is specified for a class , method or data member – It is said to be having the **default** access modifier by default.
   - The public access modifier is specified using the keyword **public**.
     The public access modifier has the **widest scope** among all other access modifiers.

6. **Write significance of CLASSPATH.**
   Repeat in 2018-Mar-Apr

7. **Write down the use of volatile keyword.**
   Using volatile is yet another way (like synchronized, atomic wrapper) of making class thread safe. Thread safe means that a method or class instance can be used by multiple threads at the same time without any problem.

8. **Differentiate checked and unchecked exception.**

Checked Exceptions	UnChecked Exceptions
The exceptions which are checked by the compiler for smooth execution of the program at runtime are called Checked Exception	The exceptions which are not checked by the compiler are called Unchecked Exceptions
These occur at compile time	These occur at runtime
If these are not handled properly, they will give compile time error	If these exceptions are not handled properly, they dont give compile time error. But the program will be terminated prematurely at runtime

2016 Mar-Apr

1. **What do you mean by immutable object? Explain with example.**
   String is immutable object. **Immutable means that once the constructor for an object has completed execution that instance can't be altered.**

2. **Java is robust.**
   Repeat in 2018-Mar-Apr

3. **Define monitor**
   Repeat in 2018-Mar-Apr

4. **What is JVM**
   Repeat in 2018-Mar-Apr

5. **What is difference between applet & application?**

Applet	Application
Small Program	Large Program
Used to run a program on client Browser	Can be executed on stand alone computer system
Applet is portable and can be executed by any JAVA supported browser.	Need JDK, JRE, JVM installed on client machine.
Applet applications are executed in a Restricted Environment	Application can access all the resources of the computer
Applets are created by extending the java.applet.Applet	Applications are created by writing public static void main(String[] s) method.
Applet application has 5 methods which will be automatically invoked on occurrence of specific event	Application has a single start point which is main method
Main method is not present	Main method is present
Does not require any security	Requires highest security for the system as they are untrusted

6. **Explain value of()**
   The **java string valueOf()** method converts different types of values into string. By the help of string valueOf() method, you can convert int to string, long to string, boolean to string, character to string, float to string, double to string, object to string and char array to string.

7. **Write down use of CLASSPATH.**
   Repeat in <u>2018-Mar-Apr</u>

8. **Is it possible to create object of interface? if yes then how?**
   No. We can't create

<u>2015 Mar-Apr</u>

1. **Explain the significance of using 'public' and 'static' in main().**
   "public" means that main() can be called from anywhere.
   "static" means that main() doesn't belong to a specific object

2. **List any three built in packages along with its brief description.**
   Repeat in <u>2018-Mar-Apr</u>

3. **How java implement feature of goto?**
   Repeat in <u>2018-Mar-Apr</u>

4. **Define daemon thread.**
   Daemon thread in java is a service provider thread that provides services to the user thread. Its life depend on the mercy of user threads i.e. when all the user threads dies, JVM terminates this thread automatically.

   The java.lang,Thread class provides two methods for java daemon thread.

   1.void setDaemon()
   is used to mark the current thread as daemon thread or user thread.
   2. boolean isDaemon()
   is used to check that current is daemon

5. **Explain abstract keyword.**
   There can be abstract class and abstract method
   A class that is declared as abstract is known as **abstract class**. It needs to be extended and its method implemented. It cannot be instantiated.
   A method that is declared as abstract and does not have implementation is known as **abstract method.**

6. **What are the differences between paint() and repaint().**
   Repeat in <u>2018-Mar-Apr</u>

7. **How to compare two objects?**
   By using = = operator.

8. Give difference between & and &&.

&	&&
It is bitwise(and) operator	It is logical(and) operator
Binary AND Operator copies a bit to the result if it exists in both operands	If both the operands are non-zero, then the condition becomes true.
If a=60 and b=13 then (A & B) =13	A holds true and variable B holds false then (A && B) = false

9. Compare string and Stringbuffer.

No.	String	StringBuffer
1)	String class is **immutable**.	StringBuffer class is **mutable**.
2)	String is **slow**	StringBuffer is **fast**
3)	String class overrides the equals() method of Object class. So you can compare the contents of two strings by equals() method.	StringBuffer class doesn't override the equals() method of Object class.
4)	It consumes more memory when you concat too many strings because every time it creates new instance.	It consumes less memory when you cancat strings.

2014 Mar-Apr

1. Explain shift right zero fill operator.

>>> (zero fill right shift)

Shift right zero fill operator. The left operands value is moved right by the number of bits specified by the right operand and shifted values are filled up with zeros.

Example: A >>>2 will give 15 which is 0000 1111

2. What is the difference between length and length?

length: it is a property of java which is used for find out length for an array..
length () : it is a method in java to find out the length of the string class.

3. Give difference between break and break label.

When used without label, break only break the current loop.
When you put a label, break go to the "level" of the label, so the two for loops are skipped.

4. The default value of char typeVarrablejs

a. '\u0020" c ‘\uOOff
b. " " **d.'\u0000'**

5. **What will be the result of the expression 13 & 25?**

a. **38** c. 25
b. 9 d.12

5. The expressions (x==y && a<b) is true, if either x==y is true or a<b is true (T/F) *False*

6. **A constructor must always invoke its super class constructor in first stmt (T/f)** ***True***

7. **What is diff between abstract and concrete class?**

Abstract class	Concrete class
▸ It is must to declare a class with an abstract access modifier .	▸ Should not declare a concrete class with an abstract access modifier.
▸ May or may not contain abstract methods.	▸ Should not contain abstract methods.
▸ It is not possible to instantiate a abstract class .	▸ Instantiation is possible for a concrete class.

public abstract class <class name>
{
//variables
//abstract methods with ; (not mandatory)
//implemented methods
}
	public class <class name>
	{
	//variables
	//implemented methods
	}

2014 Sep-Oct

1. Explain byte code.

Repeat in 2017-Mar-Apr

2. What is the purpose of yield()methods.

The **java.lang.Thread.yield()** method causes the currently executing thread object to temporarily pause and allow other threads to execute.

Syntax:

```
public void yield
{
        // code
}
```

3.Give difference between repaint() and update()method.

4. Give difference between wait() and join() method.

5. What will be the result of the expression 9 | 9 ?

a. 1 c. 18 **b. 9** d. none of the above

6.One of the feature of java is that an array can store many different types of values, (true/false). ***TRUE*** *(Vector provide facility)*

7. The default case is always required in the switch selection structure, (true/false). ***FALSE***

8.Write an importance of CLASSPATH variable.

Repeat in 2018-Mar-Apr

Important

How do interfaces support polymorphism ?
an interface can implement by any number of classes so that we can say that interface supports polymorphism.

What type of exceptions must be caught or declared?
Checked exceptions

How java is a strongly type language?
It has strict compile time and runtime checking for data types.

Difference between >> and >>>

>> (right shift)

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Example: A >> 2 will give 15 which is 1111

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Explain Wrapper class in java.

Wrapper class in java provides the mechanism to convert primitive into object and object into primitive. Autoboxing and unboxing feature facilitates the process of generates a code implicitly to convert primitive type to the corresponding wrapper class type and vice-versa.

One of the eight classes of java.lang package are known as wrapper class in java.
The list of eight wrapper classes are given below:

Primitive Type	Wrapper class
Boolean	Boolean
Char	Character
Byte	Byte
Short	Short
Int	Integer
Long	Long
Float	Float
Double	Double

Wrapper class Example: Primitive to Wrapper

```
public class WrapperExample1{
public static void main(String args[]){
//Converting int into Integer
int a=10;
Integer i=Integer.valueOf(a);//converting int into Integer
Integer j=a;//autoboxing, now compiler will write Integer.valueOf(a) internally
System.out.println(a+" "+i+" "+j);
}}
```

Output:

10 10 10

Wrapper class Example: Wrapper to Primitive

```
public class WrapperExample2{
public static void main(String args[]){
//Converting Integer to int
Integer a=new Integer(30);
int i=a.intValue();//converting Integer to int
int j=a;//unboxing, now compiler will write a.intValue() internally
System.out.println(a+" "+i+" "+j);
}}
```

Output:

30 30 30

- **Why java is architecture neutral?**
  - Compiled into architecture neutral byte-code format (.class files)
  - No machine/OS-dependent aspects, e.g. sizes of int and long are fixed
  - Can run on any system that has a Java Virtual Machine (JVM)
  - Allows programs to be easily distributed over the network
  - Important: "Write Once, Run Anywhere"

- **Dynamic method dispatch or Explain run time polymorphism**
  - Explain method overriding