Q - 01)
a)java

b)javac

c).java

d).class

e)bytecode

Q - 02)

*The main task of a compiler in programming languages is to translate the source code wriiten by a programmer into machine code that can be executed by a computer.

Q - 03)

	c	**java**
programming model	C is a procedural programming language.	java is an object-oriented programming language.
Platform dependence	C platform-dependent.It is based on the conceot of write once compile anywhwere.	java is platform-independent.It is based on the concept of write once run anywhwere.
Type of language	C is a middl-level language as it binds the bridges between machine-level and high-level languages.	java is a high-level language as the translation of java code takes place into machine language,using a compiler or interpreter.
Security	C is a less secure programming language than java.	java is comaratively more secure than C.

Q - 04)

yes
A java program compiled on a windows environment can be run on other operating systems,such as Linux or mac Os as long as the appropriate java run time enviroment(JRE) is installed on the target machine.This is possible because java code is compiled into

bytecode,which can be interpreted by the JRE on any platform,providing a platform-independent way executing code.

Overall while java's "write once,run anywhere" mantra is largely true.

Q - 05)

The java interpreter,which is part of the java virtual machine(JVM),is responsible for executing java bytecode.It takes the bytecode an input,interpreter it,and executes the corresponding instructions on the underlying hardware.The java interpreter is designed to be platform independent,meaning that the same bytecode can be run on any system that has a compatible JVM installed.

On the other hand,the O/S interpreter(also known as the command interpreter or shell)is a program that interpreter and executes command entered by a user in taeminal or command-line interface.It is typically part of the operating system snd interacts directly with the hardware.The O/S interpreter is responsible for managing processes,executing programs and handling input and output operations.

In summary,while the java interpreter is designed specifically for executing java bytecode,the O/S interpreter is general-purpose program that interpretes and executes commands on the underlying operating system.The java interpreter is part of the JVM,while the O/S interpreter typically part of the operating system itself.

Q - 06)

In java"compilation" refers to process of converting human-readable java source code into machine-readable bytecode that can be executed by the Java Virtual Machine(JVM).

And it's necessary to ensure that the code is error-free and optimized for performance.

Q - 07)

Here are the steps to create and run a java program in a Linux environment;

1. Install the Java Development Kit(JDK) on your Linux machine if it's not already installed.You can download the JDK from the official Oracle website.
2. Once installed,open a terminal window and navigate to the directory where you want to create your java program.

3. create a new file with a.java extension.for
example, ”Example.java”.You can use any text editor to create the file,such as vi,nano,or gedit.
4. open the file in the text editor and write your java code.
5. Save the file.
6. compile the java program by running the following command in the terminal window:
javac Example.java
This will generate a bytecode file with a.class extension.
7. Run the java program by running the following command in the terminal window:
java Example
This will execute your Java program and display in the terminal window.

Q - 08)

java is a platform independent.So,then not work in .class file in another machine.

Q - 09)
The command “java Example” in the terminal is used to run a Java program called “Example” that has been previously compiled.Here is whwt each part of the command means:

* “java” is the command used to execute Java applications on the command line.

*”Example” is the name of the Jva program that we want to run.This should be the name of the class that contains the “main” method of the program.

When you run the”java Example”command in the terminal,the java virtual Machine(JVM) loads the compiled class file for the “Example” program and Executes the code inside the”main”method.If the program requires any input from the user,it will prompt the user to provide it through the command line.

Note that in order the”java” command to run a program,we must have the Java Development Kit (JDK) installed on our computer and the “java” executable must be in our system’s PATH.

Q - 10)

A) Run
B) Error
C) Error
D) Error

E) Error
F) Error
G) Run
H) Error
I) Error
J) Error
K) Error