What is Object Oriented Programming?

An OOP is a modular approach, which allows the data to be applied within stipulated program area. It also provides the reusability feature to develop productive logic, which means to give more emphasis on data.

What are the features of OOPs?

* It gives stress on data items rather than functions.
* It makes the complete program simpler by dividing it in to a number of objects.
* The object can be used as a bridge to have data flow from one function to another.
* We can easily modify the data without any change in the function.

What are the basic elements/principles of OOPs?

The basic elements/principles of OOPs are:

1. Objects.
2. Classes
3. Data Abstraction
4. Encapsulation
5. Inheritance
6. Polymorphism
7. Data hiding.

What are the features of JAVA?

JAVA possesses the following characteristics:

1. It is an Object Oriented Programming Language.
2. JAVA programs are both compiled and interpreted.
3. It offers many security features to make its programs safe and secure.
4. It is very much case sensitive language.
5. Write once run anywhere – The JAVA programs need to be written just once, which can be run on different platforms without making changes in the program.
6. It is an open product, freely available to all.

What are the advantages of OOPs?

1. Elimination of redundant coding system and uses of existing classes through inheritance.
2. Programs can be developed by sharing existing modules.
3. Possibilities of multiple instance of an object without any interference.
4. Security of data values from other segments of the program through data hiding.

What is class?

A class represents a set of objects that share common properties, characteristics and behaviour. It contains member methods, data members and objects.

What is an Object?

An object is an identifiable entity with some common characteristics and behaviour. Objects are kept in an organized way in classes.

What is need of class in JAVA?

Classes in JAVA are needed to represents real world entities which have data type properties.

“Class is an object factory” explain. Or

“Class is a prototype of an object” explain.

Basically a class is an object maker. Each object belonging to a specific class possesses the data and methods defined within the class. It produces objects of similar type. Hence a class is termed as object factory/ prototype of an object.

Why object is called instance of class?

Object is basically a representative of a class that includes the characteristics and behaviour defined within the class. An object represents the class while using in a program hence it is said to be instance of a class.

Whay class in known as composite data type?

Class is a tool to create user defined data type.The class name becomes data type for the instance used in the program. It is such a data type that includes various predefined data within it. Hence it is called composite data type.

What do you mean by message passing?

We know that object can interact each other i.e. can pass information or receives information from another object through messages, which are known as message passing.

Name the different types of JAVA programming.

1. Stand alone program(Application program)
2. Java Applets.

What are Java Applets?

Applets are small programs that are embedded in web pages and are run on the viewer’s machine in a secured manner by Java capable browsers.

What is Data Hiding?

Data Hiding means restricting the accessibility of data with an object in such a way that it can be used only through the member method and objects.

In what way data hiding concept is implemented in OOP?

A class has data and objects encapsulated together. The member methods of a class can only be able to access the data member of the class. The data member cannot be used outside the class premises even in the same program. In this way data hiding concept is implemented.

In what way the real world object will differ from software object?

A real world object contains characteristics and behaviours. The software object replaces characteristics with data member and replaces behaviour with member function. In this way real world object differ from software objects.

Why is JAVA often called as a Platform?

Platform is an environment in which programs execute. Instead of interacting with the Operating System directly Java programs runs on a virtual machine provided by Java. Therefore it is often termed as a platform.

What do you mean by the term Java Virtual Machine (JVM)?

JVM is an abstract machine designed to be implemented on the top of the existing processors. It hides the underlying OS from Java application. Programs written in Java are compiled into Java Byte Codes which is then interpreted by a special Java interpreter for a specific platform. Java interpreter is known as JVM.

What is Byte code?

Byte code is a set of machine language instruction generated when we complied the Java source code that are understood by the JVM and are independent of the underlying hardware. The extension name of Java byte code file is .class.

“Java interpreter is called a virtual machine” explain.

Actually Java interpreter running on any machine appears and behaves like a “virtual” processor chip, which does take any support from the underlying Operating system, that is why it is called Java Virtual Machine.

What is Java Development Kit (JDK)?

The JDK comes with the collection of tools that are used for developing and executing JAVA programs.

What are Java APIs (Application Program Interface)?

The Java API consists of libraries of pre compiled code that programmers can use in their application.

What are keywords?

Keywords or reserved words are the words that convey a special meaning to the Java language compiler. Example void, for, public, else etc.

What is an Identifier? What are the rules for naming a Identifier?

Identifiers are names given to different parts of a program. Example variable, classes, functions.

The Identifier in Java-

1. Can contain alphabets, digits and \_ (underscore)
2. Must not start with a digit.
3. Cannot be Java keyword.
4. Can have any length and are case sensitive.

What are Literals?

A literal is sequence of characters used in a program to represent a constant value. Different types of literals in Java are: Integer, String, Float, Boolean, Character, Null, Double etc.

Integer literals are negative or positive whole numbers without any fractional part.

Real literals are negative or positive fraction fractional form must have at least one digit before and at least one digit after a decimal point.

A Boolean literal is always either true/ or false. Default value is false.

A character literal is one character enclosed in single quotes.(‘A’).

A string literal is a sequence of characters enclosed within double quotation marks.(“abc”)

Null literal is another special purpose literal represented by ‘\0’. It is used as a string terminator to mark end of string.

What is a data type?

A type or data type represents a set of possible values. The two types of data types are:

1. Primitive – byte, char, short, int, long, float, double, String.
2. Non-Primitive/Composite/Reference/User defined data type- class, array, interface.

What are operators?

Operators are basically symbols or tokens to perform arithmetical or logical operations to yield meaningful results.

What are punctuators?

Punctuators are the punctuation signs used as special characters in Java. Example - ?(Question mark), ;(Semicolon), .(dot).

What are separators?

They are the special characters in Java which are used to separate the variables or the characters. Example - ,(comma) and space.

What do you mean by Escape sequence/Non graphic characters?

Escape sequence/ or non graphic characters are special meaningful characters used as a commands to direct the cursor while print but they itself will not print. Escape sequence or non graphic characters are always begins with a backslash and followed by one or more characters. Example:

1. \n – New line
2. \t – Horizontal tab
3. \f – form feed

What is Unary and Binary operators?

Operators that can act on a single operand are referred as Unary operators. Example : +, -, ++, --.

Operators that can act on two operand are referred as Binary operators. Example : +, -, /,%.

What is increment / decrement operator?

Increment operator increases the value of the operand by 1 where as decrement operator decreses the value of the operand by 1. Example-

++a, --b.

What is prefix and postfix?

In prefix increment and decrement operator appear before the operand, the value of the operand first change and then assign.

In postfix increment and decrement operator appear after the operand, the value of the operand first assign and then change.

Example : Prefix : a= ++b, Postfix : a=b--;

What is the difference between = and == operator?

= Denote the assignment statement. Used to assign a value to a variable. Example : a= 50;

== Denote the relational operator. Used to check equality.

What do you mean by operator precedence?

Operator precedence determines the order in which expressions are evaluated so that we can predict the outcome of an expression. Increment/Decrement operators evaluate before arithmetic operators. Arithmetic operators evaluate before the relational operator and relational operator evaluate before the logical operators.

++, --, \*, /, %, +, -, <,>,<=,>=,==,!=,&&,|| etc.

What do you mean by compound statement?

A compound statement is a statement that includes multiple statements under curly braces.

What is an Expression?

An expression in Java is any valid combination of operators, constants and variables. Example : a + b \* 2.

What do you mean by Pure and Mixed expressions?

* In pure expression all the operands are of same data types.
* Where in mixed expression all the operands are of mixed or different data types.

What is type conversion? Name the types of type conversion.

The process of converting one predefined data type into another data type is called type conversion.

1. Implicit type conversion: In that case the data type is automatically changed in to the higher data type without the intervention of the users.
2. Explicit type conversion: In that case the data type is forced to changed to its lower data type by the intervention of the user.

Differentiate between operator and expression.

* An operator is a symbol or token that triggers an action. Example- Arithmetical operator, Relational operator, Logical operator etc.
* An expression is a group of tokens to carry out some action. Example- a+b, c=a\*b etc.

What is Data Abstraction and Encapsulation?

* Data abstraction refers to the act of representing essential features without including the background details or explanation.
* The wrapping up of data and functions into a single unit is known as Encapsulation. It is a way to implement data abstraction. Encapsulation hides the details of the implementation of an object.

What is Inheritance?

Inheritance is the process by which objects of one class can link and share some common properties of the objects from another class.

What is Polymorphism?

It is the process of using a function for more than one purpose. It allows the use of different internal structure of the object by keeping the same external interface.

Note : JAVA uses UNICODE character set which is 2 byte character code.

Name the different types of comments.

1. Single Line comment - // This is a single line comment.
2. Multi line comment - /\* This is an example of

Multi line comment \*/

1. Documenting comment - /\*\* This is an example of

Documenting comment

Name – Lmiit \*/

Note : Remember Blue Java can only run on JDK version 1.3 or above.

Difference between JDK 1.3 and Blue J:

1. JDK run on DOS based platform where Blue J run on windows based platform.
2. JDK uses DOS command to compilation where as Blue J uses menu driven approach for compilation.
3. In JDK sample program does not appear whereas in Blue J sample program appear.

What is Scanner Class?

The Scanner class is a class in java.util package which allows the user to input values of various data types. The Scanner class looks for tokens in the input. A token is a series of character that ends with a white space. A white space character can be a blank, a tab character, a carriage return or the end of file. Thus if we read a line that has a series of numbers separated by blanks, the scanner will take each number as a separate token.

What is a condition?

A condition in Java is a statement that returns a Boolean value true or false.

What is arithmetic operator?

Arithmetic operators are used for various arithmetic functions. The result of an arithmetic expression is a numerical value. Arithmetic operators can be further divided into unary and binary operator.

What is Relational operator?

Relational operators are used to determine the relationship between the different operands. The relational operators are as follows: >, <, >=, <=, ==,!=.

What is scope of variable?

A scope of variable refers to the program area inside which a variable can be accessed.

What is the significance of break in a switch case construct?

The break statement acts as a termination of the execution of the statements in a switch case construct. To stop execution and transfer the control outside the switch case body break statement is used.

What is fall through?

If a break statement is not placed then the statement in the next cases are executed one after another till the last statement of the switch case block irrespective of the case numbers. This situation is called fall through in a switch case block.

What is Iteration?

Iteration means repetition of statements.

What is an Iteration construct?

An iteration construct refers to repetition of statements until the test condition or expression is false.

What is loop?

A loop is an iteration construct used to repeat a set of Java statements.

What are the basic types of loops?

There are mainly two basic types of loops=

1. Definite loop/Finite loop – It is a loop which performs up to a given limit.
2. Indefinite/infinite loop – It is a loop where the given limit is not mentioned and it performs as long as the user wants.

What does a loop body contain?

A loop body has mainly 4 parts:

1. Initialisation of the counter variable.
2. Execution of the statements of loop(Body)
3. Test for a specified condition for the execution
4. Increment or decrement of the counter variable.

What is a Single Dimensional Array?

A .S.D.A. is a group of indexed data items of same data type that are referred to by a common name.

What is function of import keyword?

Import keyword is used to provide classes stored inside a package in our program. Ex. Import java.io.\*, import java.util.\*;

What is function?

A function is defined as a set of instruction given to the computer in order to perform a specific task. Each function has a unique name and identity with which it is called within a program.

What are the advantages of function?

1. When one program is too complicated the method is dividing into smaller steps or logics to simplify the complexity of program
2. By declaring the methods, the program size becomes reduced into smaller parts as all the methods are stored in only one place in the memory.

What are the two way to invoke a function?

Call by value or Pass by value and Call by reference or Pass by reference are two ways of calling functions.

What is function of *this* keyword?

*this* keyword is used to refer to the current object of the class. It is also used to differentiate between instance variable and local variable.

What is actual and formal parameter?

The parameters/variables specified in the function call statement are known as actual parameters.

The parameters/variables specified in the function prototype are known as formal parameters.

What is pure and impure function?

Pure functions are the functions which does not alters the state of an object received as parameter. It is also known as Getter method or Accessor method.

Impure functions are the functions which does alters the state of an object received as parameter. It is also known as Setter method or Mutator method.

Example of pure function: Example of Impure function:

int check(int y) int check(int y)

{ {

int a=5+y; y=5+y;

return a; return y;

} }

What is function prototype and function signature?

The function prototype is the declaration of a function that omits the function body thus specifying the function name, number of arguments, arguments types and return type. Example:

int check(String s, int a)

The function name and the parameter list from the prototype of the function forms the function signature.

Example: check(“LMiit”, 20);

What do you mean by call by value and call by reference?

Call by value is the process of passing copy of values from actual parameter to the formal parameter. Any change made in formal parameter does not affect the actual parameter. All primitive data types like int, char, double etc. are passed by value.

Call by reference is the process of passing the reference(address) of the actual parameter to the formal parameter. Any change made in the formal parameter will affect the actual parameter. All reference data types like array, interface etc. are passed by reference.

What is Function Overloading? What principal it refers?

Function Overloading is a process of defining two or more functions having the common function name but different numbers and types of parameter.

It refers polymorphism principal.