UNIT 1

2 marks

1. Define Object Oriented Programming

Object-Oriented Programming (OOP) is a programming paradigm based on the concept of "objects", which can contain data, in the form of fields (often known as attributes/data members/properties), and code, in the form of procedures (often known as functions/methods).

2. What are the four principles of OOP?

Abstraction, Encapsulation, Inheritance, Polymorphism

3. What are the features of Object Oriented Programming?

- Emphasis is on data rather than procedure. Programs are divided into objects.
- Functions that operate on the data of an object are tied together.

Objects may communicate with each other through functions. Follows bottom-upapproach.

4. What are the features of Java Language?

The features of Java Language are Simple, Object-Oriented, Portable, Platform independent, Secured, Robust, Architecture neutral, Dynamic, Interpreted, HighPerformance, Multithreaded and Distributed.

5. What are the operators supported in Java?

Operator in java is a symbol that is used to perform operations. For example: +, -, *, / etc. There are many types of operators in java which are Unary Operator, Arithmetic Operator, Shift Operator, Relational Operator, Bitwise Operator, Logical Operator, Ternary Operator and, Assignment Operator.

6. Define Abstraction.

Abstraction refers to the act of representing the essential features without including the background details or explanations. It reduces the complexity and increases the efficiency. Small programs can be easily upgraded to large programs. Software complexity can easily be managed.

7. What is Polymorphism?

Polymorphism is the ability to take more than one form and refers to an operation exhibiting different behavior instances. Object oriented programs use polymorphism tocarry out the same operation in a manner customized to the object.

8. Define Objects and Classes in Java (Nov/Dec 2018)

A class can be defined as a template/blueprint that describes the behavior/state that the object of its type support.ie. A class is a blueprint from which individual objects are created An Object can be defined as an instance of a class. An object contains an address and takes up some space in memory. Objects can communicate without knowing the details of each other's data or code

9. Write the syntax for declaration of class and creation of objects?

//Syntax for class

class ClassName{

Access-specifier datatype datamember(s);

Access-specifier method-declaration(s)/definition(s) **}**

//Syntax for object

ClassName objectName=new ClassName();

10. Define Encapsulation (Apr/May 2012) (Apr 2017)(Nov/Dec 2020)(Apr/May 2021)

The wrapping up of data and functions into a single unit is known as data encapsulation. Here the data is not accessible to the outside the class. The data inside that class is accessible by the function in the same class. It is normally not accessible from the outside of the component.

11. What is Inheritance? What are its types?

Inheritance is a mechanism of reusing the properties and extending existing classeswithout modifying them, thus producing hierarchical relationships between them.

Types: Single inheritance, Multi-level inheritance, Hierarchical inheritance, Hybrid inheritance.

12. What do you mean by Variable? What are the rules for variable declaration?

Variable is a fundamental unit of storage in java. The variables are used in combination with identifiers, data types, operators and some value for initialization. The syntax ofvariable declaration will be:

data_type name_of_variable[=initialization];

13. What is Garbage collection?

In java, garbage means unreferenced objects. Garbage Collection is process of reclaiming the runtime unused memory automatically. In other words, it is a way to destroy the unused objects.

14. What is Constructors in Java? What are its types? (Nov/Dec 2020)(Apr/May 2021)

A constructor is a special method that is used to initialize an object. The name of the constructor and the name of the class must be the same. A constructor does not have any return type.

There are two types of Constructor

Default Constructor – constructor without argument Parameterized constructor – constructor with argument

15. How will you declare a two dimensional array?

The two dimensional array can be declared and initialized as follows

Syntax: data_type array_name[][]=new data_type[size][size];For example: int a[][]=new int[3][3];

16. What is Java Doc? List any four Java Doc comments. (Nov/Dec 2018)(Nov/Dec 2019)

A Javadoc comment is set off from code by standard multi-line comment tags/* and */. The opening tag, however, has an extra asterisk, as in /**.The first paragraph is a description of the method documented. Following the description are a varying number of descriptive tags, signifying: The parameters of the method (@param),What the method returns (@return) and any exceptions the method may throw (@throws)

17. Define access specifier/modifier? (Nov/Dec 2018) (Nov/Dec 2019)

Access specifiers/modifiers in Java helps to restrict the scope of a class, constructor,variable, method or data member. There are four types of access modifiers available injava:Default – No keyword required , Private , Protected and Public

18. What is a package?

A java package is a group of similar types of classes, interfaces and sub-packages. Packagein java can be categorized in two form, built-in package and user-defined package. Thereare many built-in packages such as java, lang, awt, javax, swing, net, io, util, sql etc.

19. What is the use of static keyword in Java?

The static keyword in Java is used for memory management mainly. We can apply java static keyword with variables, methods, blocks and nested class. The static keyword belongs to the class than an instance of the class

20. Can a java Source file be saved sing a name other than the class name?Justify.(APR/MAY 2019)

Yes, you can save your java source code file with any other name, not same as your main class name but when you comiple it than byte code file name will be same as your main class name.

21. What are the control flow statements in java?

if, if-else, nested-if , if-else-if,switch-case,jump – break, continue, return

UNIT-I / PART B
(i) Explain the characteristics of OOPs (Nov/Dec 2018) (ii) Explain the features and characteristics of JAVA(Nov/Dec 2019)
i) Describe the typical java program structure. ii) Explain the general java program compilation and execution.
What are the different data types in JAVA? Explain each of them with example.
How to pass and return the objects to and from the method?
Discuss in detail the access specifiers available in Java.
Explain Packages in detail.
Explain Constructors with examples.
Explain in detail the various operators in Java.
Explain the concepts of arrays in Java and explain its types with examples?
Explain in detail about static variable and static method in Java with example?
Discuss the three OOPS principles in detail.(Apr/May 2019)
What are literals? Explain the types of literals supported by Java.(Apr/May 2019)
Explain the Selection statements in Java with suitable examples.(Apr/May 2019)
Write a Java code using do-while loop that counts down to 1 from 10 printing exactly ten lines of ―hello‖.(Apr/May 2019)
What is JVM? Explain the internal architecture of JVM with neat sketch.(Nov/Dec 2019)
Develop a java program to find the smallest number in the given array by creating one dimensional array and two dimensional array using new operator.(Nov/Dec 2019).
(i) What is a method? How method is defined? Give example (Nov./Dec.2018) (ii) State the purpose of finalize() method in java. With an example explain how finalize() method can be used in java program
What are the three categories of control statements used in Java? Explain each category with example. (Nov/Dec 2020)(Apr/May 2021)
How Java changed the internet? ii) If semicolons are needed at the end of each statement, why does the comment line not end with a semicolon ? (Nov/Dec 2020)(Apr/May 2021)