

Unit 1

1. List and explain the components of Java Virtual Machine(JVM).
2. Java is called as platform independent and strongly typed language. Justify your answer.
3. What do you mean by object reference variable in Java? Differentiate between object and reference of a class.
4. What are the primitive data types in Java? Briefly explain their size, range and other details.
5. Define Identifier. Explain rules for identifiers in Java.
6. Write a short note on Java Virtual Machine (JVM).
7. How is main() method of Java written? Explain in details.
8. List and explain the the salient features of Java.
9. What is mean by Keyword in Java. What are the Keywords available in Java
10. Write in detail about different types of operators in Java, category-wise quoting their functionality, operands and return type. Give one example statement for each.
11. Briefly explain: (i) Type annotations (ii) Lambda expressions.
12. Explain the terms : narrowing, widening, instantiation, auto boxing.
13. Explain Break, Continue and Return statement in Java.
14. Explain the following methods of String.
 - i) Length() ii) equals() iii) compare To() iv) substring() v) char At()
15. Write a Java code to
 - i. check whether the string “madam” is starting and ending with a same letter.
 - ii. Count all vowels in a string “welcome”.
 - iii. replace ‘w’ with ‘W’ in a string “welcome”.
 - iv. append “Welcome” and “MADAM”
16. Write a note on:
 - i. Autoboxing and unboxing

- ii. Java Development Kit(JDK)
- iii. Conditional Opertaor.

Unit 2

1. Explain how memory is allocated to objects in Java?
2. Discuss in detail the working of 'foreach' loop in Java.
3. Explain the need of variable arguments with help of an example.
4. What is garbage collection in Java? How it is helpful?
5. When do we use keywords final and static? Explain the working of static member functions.
6. What do you mean by method overloading? Write a program to implement the concept of constructor overloading.
7. Explain : (i) Variable Arguments(Varargs) (ii) this.
8. Write a short note on access specifiers in Java.
9. Demonstrate the behavior of static members in Java using a suitable example.
10. Write a comparative note on overloading and overriding in Java.
11. Explain the functionality of different types of iterative statements in Java using suitable examples.
12. List and explain the types of classes in Java.
13. Write a program to illustrate the concept of method overloading.
14. What is a Constructor ? Explain the characteristics of constructor.
15. When do we use Switch- case statement. Explain it with example.
16. Write a short note on Super Keyword with example.
17. What is Class? How to define it?
18. How the method accessed in Java Program.
19. Explain the semantics and functionality of the given statements :
Rectangle rec = new Rectangle(a,b);
break out;

```
public static void main(String arg[]) {.. }
```

Unit 3

1. Explain the use of keywords super and this. What are the facts based on which base class constructors will be called while creating derived class objects?
2. What is an interface? How is an interface different from a class?
3. Explain the concept of method overriding with the help of an example.
4. What is the purpose of a package? Explain the steps to create user define packages in Java.
5. Write a program to implement the concept of multilevel inheritance.
6. Define an abstract class 'Shape' with an abstract method namely 'CircleArea' taking one parameter that is its radius to compute area of a circle. Now create another class 'Area' containing a method 'CircleArea' for printing the area of circle. Create an object of class 'Area' and test class 'Area'.
7. How do you create your own package and import it in a Java program? Explain the procedure step-wise using a suitable example.
8. Differentiate between abstract class and interface in Java.
9. Explain the terms/keywords : final , finally , finalize()
10. What is an inheritance? Explain multiple inheritance in Java.
11. Write a program to illustrate the concept of abstract method and abstract class.
12. Write a program to illustrate the concept of abstract class and method.

Unit 4

1. Why do we need to use vectors? Explain with the help of an example.
2. Explain life cycle of thread with a neat labeled diagram.
3. Can we handle multiple exceptions using a single catch block? Justify your answer with an example.
4. Write a program to demonstrate the use of a class FileInputStream. Accept the input file name at command line.
5. What do you mean by streams? Explain the concept of streams and types of streams available in Java.
6. Write a program that creates two threads. Each thread is instantiated from the same class. It executes a loop with 10 iterations. Each iteration displays “Welcome” message, sleeps for 200 milliseconds.
7. What is a vector? List out any five vector methods and quote their functionality. Write one example for each.
8. Explain any 3 different cases of exception handling.
9. How is Vector different from array? How can we create Vector in Java?
10. Explain the use Enumeration data type in Java.
11. What are different ways of creating new Thread in Java?
12. Write short note on an array in Java.
13. How can we pass an array in method as parameter explain with example.
14. What does mean by main thread? Explain with example.
15. Explain value() and valueof() method in enumeration.
16. What is multithreading in Java explain with example.

Unit 5

1. What is the use of adapter class in Java? Explain any one of the adapter classes defined in Java.
2. What is the role of layout manager? What is the default layout of frame? Explain its working.
3. How the concept of inner classes helps in Java to handle events? Explain with the help of interface MouseListener.
4. Develop a frame that has three radio buttons Red, Green, Blue. On Click of any one of them background color of the frame should change accordingly.
5. Explain any two overloaded constructors and three methods of class Scrollbar.
6. Write a program to demonstrate the use of Canvas.
7. Briefly explain: delegation model, event, event listeners, and event sources.
8. What is an Applet? Explain its life cycle in Java.
9. What is a layout manager? Explain any two layouts.
10. Write about: Button, Textfield, and Label controls.
11. Explain <APPLET> and <PARAM> tags with their attributes.
12. Explain Checkbox class along with constructors in details.
13. Create an applet to display “Java World”, change the text color to Red.
14. Explain briefly event Delegation model.
15. What is radio button? Discuss its usage in Java.
16. Explain the following Listners interfaces
 - a. KeyListner
 - b. MouseListner