

NGM COLLEGE
DEPARTMENT OF COMPUTER SCIENCE (SF)

17UCS307 – JAVA PROGRAMMING

K1 Level Questions:

Unit-I

1. Which of the following is a type of polymorphism in Java?

- a) Compile time polymorphism
- b) Execution time polymorphism
- c) Multiple polymorphism
- d) Multilevel polymorphism

Answer: a

2. When does method overloading is determined?

- a) At run time
- b) At compile time
- c) At coding time
- d) At execution time

Answer: b

3. Which concept of Java is a way of converting real world objects in terms of class?

- a) Polymorphism
- b) Encapsulation
- c) Abstraction
- d) Inheritance

Answer: c

4. Which component is responsible to optimize bytecode to machine code?

- a) JVM
- b) JDK

- c) JIT
- d) JRE

Answer: c

5.How can we identify whether a compilation unit is class or interface from a .class file?

- a) Java source file header
- b) Extension of compilation unit
- c) We cannot differentiate between class and interface
- d) The class or interface name should be postfixed with unit type

Answer: a

6.Which of these packages contains abstract keyword?

- a) java.lang
- b) java.util
- c) java.io
- d) java.system

Answer: a

7.Which of these class is used to create an object whose character sequence is mutable?

- a) String()
- b) StringBuffer()
- c) String() & StringBuffer()
- d) None of the mentioned

Answer: b

8.Which of these method of class StringBuffer is used to find the length of current character sequence?

- a) length()
- b) Length()
- c) capacity()
- d) Capacity()

Answer: a

9. What is the string contained in s after following lines of code?

```
StringBuffer s = new StringBuffer("Hello"); s.deleteCharAt(0);
```

- a) Hell
- b) ello
- c) Hel
- d) llo

Answer: b

10. Which of these method(s) is/are used for writing bytes to an outputstream?

- a) put()
- b) print() and write()
- c) printf()
- d) write() and read()

Answer: b

Unit-II

11. Which keyword is used by the method to refer to the object that invoked it?

- a) import
- b) catch
- c) abstract
- d) this

Answer: d

12. What is the return type of a method that does not return any value?

- a) int
- b) float
- c) void
- d) double

Answer: c

13. Which of these selection statements test only for equality?

- a) if
- b) switch
- c) if & switch
- d) none of the mentioned

Answer: b

14. Which of these jump statements can skip processing the remainder of the code in its body for a particular iteration?

- a) break
- b) return
- c) exit
- d) continue

Answer: d

15. Which of these is the method which is executed first before execution of any other thing takes place in a program?

- a) main method
- b) finalize method
- c) static method
- d) private method

Answer: c

16. Which of these data type can be used for a method having a return statement in it?

- a) void
- b) int
- c) float
- d) both int and float

Answer: d

17.If an expression contains double, int, float, long, then the whole expression will be promoted into which of these data types?

- a) long
- b) int
- c) double
- d) float

Answer: c

18.Which of the below is invalid identifier with the main method?

- a) public
- b) static
- c) private
- d) final

Answer: c

19.Which of these can not be used for a variable name in Java?

- a) identifier
- b) keyword
- c) identifier & keyword
- d) none of the mentioned

Answer: b

20. which of the following can be operands of arithmetic operators?

- a) Numeric
- b) Boolean
- c) Characters
- d) Both Numeric & Characters

Answer: d

Unit-III

21. How to copy contents of array?

- a) System.arrayCopy()
- b) Array.copy()
- c) Arrays.copy()
- d) Collection.copy()

Answer: a

22 . Which of these are selection statements in Java?

- a) if()
- b) for()
- c) continue
- d) break

Answer: a

23. Which of the following is a type of polymorphism in Java?

- a) Compile time polymorphism
- b) Execution time polymorphism
- c) Multiple polymorphism
- d) Multilevel polymorphism

Answer: a

24. Which of the below is invalid identifier with the main method?

- a) public
- b) static

- c) private
- d) final

Answer: c

25. Which of these operators is used to allocate memory for an object?

- a) malloc
- b) alloc
- c) new
- d) give

Answer: c

26. Which of these packages contains the exception Stack Overflow in Java?

- a) java.lang
- b) java.util
- c) java.io
- d) java.system

Answer: a

27. Which of this method of class String is used to obtain a length of String object?

- a) get()
- b) Sizeof()
- c) lengthof()
- d) length()

Answer: d

28. Which of these methods of a Thread class is used to suspend a thread for a period of time?

- a) sleep()
- b) terminate()

- c) suspend()
- d) stop()

Answer: a

29. Which of these exceptions will be thrown if we use null reference for an arithmetic operation?

- a) ArithmeticException
- b) NullPointerException
- c) IllegalAccessException
- d) IllegalOperationException

Answer: b

30. Which of the interface contains all the methods used for handling thread related operations in Java?

- a) Runnable interface
- b) Math interface
- c) System interface
- d) ThreadHandling interface

Answer: a

Unit-IV

31. Which of these class is used to read and write bytes in a file?

- a) FileReader
- b) FileWriter
- c) FileInputStream
- d) InputStreamReader

Answer: c

32. Which of these classes is used for input and output operation when working with bytes?

- a) InputStream
- b) Reader
- c) Writer
- d) All of the mentioned

Answer: a

33. Which of these class is a superclass of all other classes?

- a) Math
- b) Process
- c) System
- d) Object

Answer: d

34. Which of these class is not a member class of java.io package?

- a) String
- b) StringReader
- c) Writer
- d) File

Answer: a

35. Which of these class is not related to input and output stream in terms of functioning?

- a) File
- b) Writer
- c) InputStream
- d) Reader

Answer: a

36. Standard output variable 'out' is defined in which class?

- a) Void
- b) Process
- c) Runtime
- d) System

Answer: d

37. Which of these packages contains all the event handling interfaces?

- a) java.lang
- b) java.awt
- c) java.awt.event
- d) java.event

Answer: c

38. Which of these keywords is not a part of exception handling?

- a) try
- b) finally
- c) thrown
- d) catch

Answer: c

39. Which of these exceptions handles the divide by zero error?

- a) ArithmeticException
- b) MathException
- c) IllegalAccessException
- d) IllegalException

Answer: a

40. Which of these exceptions will occur if we try to access the index of an array beyond its length?

- a) ArithmeticException
- b) ArrayException
- c) ArrayIndexException
- d) ArrayIndexOutOfBoundsException

Answer: d

Unit-V

41. What decides thread priority?

- a) Process
- b) Process scheduler
- c) Thread
- d) Thread scheduler

Answer: d

42. Which of the following will ensure the thread will be in running state?

- a) yield()
- b) notify()
- c) wait()
- d) Thread.killThread()

Answer: c

43. Which of these is used to read a string from the input stream?

- a) get()
- b) getLine()
- c) read()
- d) readLine()

Answer: c

44. Which of these methods can be used to output a string in an applet?

- a) display()
- b) print()
- c) drawString()
- d) transient()

Answer: c

45. Which of these methods is a part of Abstract Window Toolkit (AWT) ?

- a) display()
- b) paint()
- c) drawString()
- d) transient()

Answer: b

46. Which of these operators can be used to get run time information about an object?

- a) getInfo
- b) Info
- c) instanceof
- d) getinfoof

Answer: c

47. Which of these methods can be used to writing console output?

- a) print()
- b) println()
- c) write()
- d) all of the mentioned

Answer: d

48. Which of these class is used to read from a file?

- a) InputStream
- b) BufferedInputStream
- c) FileInputStream
- d) BufferedFileInputStream

Answer: c

49. Which of these events is generated by scroll bar?

- a) ActionEvent
- b) KeyEvent
- c) WindowEvent
- d) AdjustmentEvent

Answer: d

50. Which of these methods can be used to obtain the command name for invoking ActionEvent object?

- a) getCommand()
- b) getActionCommand()
- c) getActionEvent()
- d) getActionEventCommand()

Answer: b

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17UCS307 – JAVA PROGRAMMING

K2 Level Questions:

Unit-I

1. List any five features of Java?

Some features include Object Oriented, Platform Independent, Robust, Interpreted, Multi-threaded

2. Why is Java Architectural Neutral?

It's compiler generates an architecture-neutral object file format, which makes the compiled code to be executable on many processors, with the presence of Java runtime system.

3. How Java enabled High Performance?

Java uses Just-In-Time compiler to enable high performance. Just-In-Time compiler is a program that turns Java bytecode, which is a program that contains instructions that must be interpreted into instructions that can be sent directly to the processor.

4. Why Java is considered dynamic?

It is designed to adapt to an evolving environment. Java programs can carry extensive amount of run-time information that can be used to verify and resolve accesses to objects on run-time.

5. What is Java Virtual Machine and how it is considered in context of Java's platform independent feature?

When Java is compiled, it is not compiled into platform specific machine, rather into platform independent byte code. This byte code is distributed over the web and interpreted by virtual Machine (JVM) on whichever platform it is being run.

6. List some Java keywords(unlike C, C++ keywords)?

Some Java keywords are import, super, finally, etc.

7. What do you mean by Object?

Object is a runtime entity and it's state is stored in fields and behavior is shown via methods. Methods operate on an object's internal state and serve as the primary mechanism for object-to-object communication.

8. Define class?

A class is a blue print from which individual objects are created. A class can contain fields and methods to describe the behavior of an object.

9. What kind of variables a class can consist of?

A class consist of Local variable, instance variables and class variables.

10. What is a Instance Variable?

Instance variables are variables within a class but outside any method. These variables are instantiated when the class is loaded.

Unit-II

11. What is a Class Variable?

These are variables declared with in a class, outside any method, with the static keyword.

12. What do you mean by Constructor?

Constructor gets invoked when a new object is created. Every class has a constructor. If we do not explicitly write a constructor for a class the java compiler builds a default constructor for that class.

13. List the three steps for creating an Object for a class?

An Object is first declared, then instantiated and then it is initialized.

14. What is the default value of byte datatype in Java?

Default value of byte datatype is 0.

15. What is the default value of float and double datatype in Java?

Default value of float and double datatype in different as compared to C/C++. For float its 0.0f and for double it's 0.0d

16. When a byte datatype is used?

This data type is used to save space in large arrays, mainly in place of integers, since a byte is four times smaller than an int.

17. What is a static variable?

Class variables also known as static variables are declared with the static keyword in a class, but outside a method, constructor or a block.

18. What do you mean by Access Modifier?

Java provides access modifiers to set access levels for classes, variables, methods and constructors. A member has package or default accessibility when no accessibility modifier is specified.

19. What is protected access modifier?

Variables, methods and constructors which are declared protected in a superclass can be accessed only by the subclasses in other package or any class within the package of the protected members' class.

20. Variables used in a switch statement can be used with which datatypes?

Variables used in a switch statement can only be a string, enum, byte, short, int, or char.

Unit-III

21. When parseInt() method can be used?

This method is used to get the primitive data type of a certain String.

22. Why is StringBuffer called mutable?

The String class is considered as immutable, so that once it is created a String object cannot be changed. If there is a necessity to make a lot of modifications to Strings of characters then StringBuffer should be used.

23. What is the difference between StringBuffer and StringBuilder class?

Use StringBuilder whenever possible because it is faster than StringBuffer. But, if thread safety is necessary then use StringBuffer objects.

24. What is finalize() method?

It is possible to define a method that will be called just before an object's final destruction by the garbage collector. This method is called finalize(), and it can be used to ensure that an object terminates cleanly.

25. What is an Exception?

An exception is a problem that arises during the execution of a program. Exceptions are caught by handlers positioned along the thread's method invocation stack.

26. What do you mean by Checked Exceptions?

It is an exception that is typically a user error or a problem that cannot be foreseen by the programmer. For example, if a file is to be opened, but the file cannot be found, an exception occurs. These exceptions cannot simply be ignored at the time of compilation.

27. Explain Runtime Exceptions?

It is an exception that occurs that probably could have been avoided by the programmer. As opposed to checked exceptions, runtime exceptions are ignored at the time of compilation.

28. Which are the two subclasses under Exception class?

The Exception class has two main subclasses : IOException class and RuntimeException Class.

29. When throws keyword is used?

If a method does not handle a checked exception, the method must declare it using the throws keyword. The throws keyword appears at the end of a method's signature.

30. When throw keyword is used?

An exception can be thrown, either a newly instantiated one or an exception that you just caught, by using throw keyword.

Unit-IV

31. How finally used under Exception Handling?

The finally keyword is used to create a block of code that follows a try block. A finally block of code always executes, whether or not an exception has occurred.

32. What things should be kept in mind while creating your own exceptions in Java?

- i. While creating your own exception –
- ii. All exceptions must be a child of Throwable.
- iii. If you want to write a checked exception that is automatically enforced by the Handle or Declare Rule, you need to extend the Exception class.
- iv. You want to write a runtime exception, you need to extend the RuntimeException class.

33. Define Inheritance?

It is the process where one object acquires the properties of another. With the use of inheritance the information is made manageable in a hierarchical order.

34. When super keyword is used?

If the method overrides one of its superclass's methods, overridden method can be invoked through the use of the keyword super. It can be also used to refer to a hidden field.

35. What is Polymorphism?

Polymorphism is the ability of an object to take on many forms. The most common use of polymorphism in OOP occurs when a parent class reference is used to refer to a child class object.

36. What is Abstraction?

It refers to the ability to make a class abstract in OOP. It helps to reduce the complexity and also improves the maintainability of the system.

37. What is Abstract class?

These classes cannot be instantiated and are either partially implemented or not at all implemented. This class contains one or more abstract methods which are simply method declarations without a body.

38. What is an Interface?

An interface is a collection of abstract methods. A class implements an interface, thereby inheriting the abstract methods of the interface.

39. Define Packages in Java?

A Package can be defined as a grouping of related types(classes, interfaces, enumerations and annotations) providing access protection and name space management.

40. What do you mean by Multithreaded program?

A multithreaded program contains two or more parts that can run concurrently. Each part of such a program is called a thread, and each thread defines a separate path of execution.

Unit-V

41. What are the two ways in which Thread can be created?

Thread can be created by: implementing Runnable interface, extending the Thread class.

42. What is an applet?

An applet is a Java program that runs in a Web browser. An applet can be a fully functional Java application because it has the entire Java API at its disposal.

43. An applet extend which class?

An applet extends java.applet.Applet class.

44. Write the difference between Overloading and Overriding?

Method overloading increases the readability of the program. Method overriding provides the specific implementation of the method that is already provided by its super

class parameter must be different in case of overloading, parameter must be same in case of overriding.

45. What is final class?

Final classes are created so the methods implemented by that class cannot be overridden. It can't be inherited.

46. What are the ways in which a thread can enter the waiting state?

A thread can enter the waiting state by invoking its `sleep()` method, by blocking on IO, by unsuccessfully attempting to acquire an object's lock, or by invoking an object's `wait()` method. It can also enter the waiting state by invoking its (deprecated) `suspend()` method.

47. What is the difference between yielding and sleeping?

When a task invokes its `yield()` method, it returns to the ready state. When a task invokes its `sleep()` method, it returns to the waiting state.

48. What is the difference between the `paint()` and `repaint()` methods?

The `paint()` method supports painting via a `Graphics` object. The `repaint()` method is used to cause `paint()` to be invoked by the AWT painting thread.

49. What is the purpose of `File` class?

It is used to create objects that provide access to the files and directories of a local file system.

50. What is the difference between the `Reader/Writer` class hierarchy and the `InputStream/OutputStream` class hierarchy?

The `Reader/Writer` class hierarchy is character-oriented, and the `InputStream/OutputStream` class hierarchy is byte-oriented.

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17UCS307 – JAVA PROGRAMMING

K3 Level Questions:

Unit-I:

1. Discuss about the evolution of java.
2. Examine java constants.
3. Discuss about variables in java.
4. Classify the datatypes in java.
5. Classify the operators in java.
6. Discuss expressions in java.
7. Examine decision making and branching statements in java.
8. Discuss decision making and looping statements in java.
9. Compare else if ladder with switch case.
10. Differentiate break with continue statement.

Unit-II:

11. Discuss about classes and objects in java
12. Differentiate method overloading and overriding.
13. Examine the creation of two-dimensional arrays in java with example.
14. Discuss about String in java.
15. Examine Vectors in java.
16. Discuss about interfaces in java.
17. How do you implement multiple inheritance in java?
18. Discuss about java packages.
19. Write notes on life cycle of a Thread.
20. Compare Thread class with Runnable interface.

Unit-III:

21. What is Exception? Give different types of exception that could occur during runtime. Why to handle exception?
22. List out the types of errors in java programming.
23. Explain applet life cycle with suitable example.
24. Differentiate between java applet & java application.
25. Explain <PARAM> tag of applet with suitable example.
26. Explain <applet> tag with all its major attributes.
27. Discuss about designing a web page using HTML tags.
28. List all the mouse events in java.
29. Discuss about keyboard events in java.
30. Discuss about drawing polygons in java.

Unit-IV:

31. Discuss about AWT Label control with example.
32. Discuss about AWT Button control with example.
33. Discuss about AWT Checkbox control with example.
34. Discuss about AWT Radiobutton (CheckboxGroup) control with example.
35. Differentiate AWT TextField with AWT TextArea.
36. Examine AWT Choice control with example.
37. Examine AWT List control with example.
38. Discuss about FlowLayoutl with example.
39. Examine BorderLayout with example.
40. Write notes on AWT Scrollbars in java.

Unit-V:

41. Examine the concept of streams in java.
42. Classify the types of stream classes in java.
43. Discuss about ByteStream classes in java.
44. Examine the CharacterStream classes in java.
45. Write notes on I/O classes in java.

46. Examine the File class with an example program.
47. Discuss about various I/O Exceptions in java.
48. Explain how to read/write characters in a file with an example program.
49. Explain how to read/write bytes in a file with an example program.
50. Write notes on handling primitive datatypes in files.

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17UCS307 – JAVA PROGRAMMING

K4 and K5 Level Questions:

Unit-I:

1. Explain java constants and variables with examples.
2. Classify the datatypes in java.
3. Classify the operators in java.
4. Explain decision making and branching statements in java.
5. Explain decision making and looping statements in java.

Unit-II:

6. Explain about methods in java. Write an example program.
7. Explain about Strings in java with example program.
8. How do you create a package in java? Explain with an example program.
9. What is thread? What is difference between multiprocessing & multithreading?
10. Write a program to define two threads. One thread will print 1 to 10 no whereas other will print 10 to 1 nos.

Unit-III:

11. Explain the following terms with respect to exception handling:
 - a. Try/Catch
 - b. Throw
 - c. Finally
 - d. Throws
12. Write a java program to input name & age of a person and throw an user-define exception, if the entered age is negative.

13. Write an Applet to accept a username in the form of parameter and print “Hello <username>”.
14. Write the steps involved in developing and running a local applet.
15. Explain any five methods from graphics class.

Unit-IV:

16. Explain about the application of java.awt package for the designing of GUI.
17. Explain Choice and List controls in java with examples.
18. Write a java program to display the horizontal and vertical scrollbars in an application.
19. Write a java program to display the controls in FlowLayout in an application.
20. Write a java program to display the controls in BorderLayout in an application.

Unit-V:

21. Explain about the concept of streams in java. Describe different stream classes.
22. Write a java program to read a file using character stream.
23. Write a java program to copy content of one file to another using character stream class.
24. What is random access file? Explain how to create a random access file in java.
25. What is interactive input/output? Explain how to apply interactive input/output in files with an example program.