

BCA 3rd Semester
030010301 - Java Programming
Unit-1(Java Platform and Programming Elements)

Q-1 Answer the following question in short.

[1 Mark each]

1. Who is known as creator of JAVA?
2. Why do we need an escape sequence?
3. List out one difference between next() and nextLine().
4. What is Narrowing Conversion?
5. Why is Java Application Programming Interface used?
6. State the term Boxing & Unboxing.
7. What is the purpose of println(),printf(),print() methods.
8. Which operator is used to concatenate two string constant?
9. What do you mean by side effect? State it by giving a proper example.
10. What will be the output of the following line of code:
`System.out.printf("1/3=%d\n",1/3);`
11. What will be the range of floating types in Java Programming?
12. What is the number of bytes used by Java primitive Integral types?
13. Define mixed mode operation with an example.

Q-2 Answer the following question.

[2-3 Marks each]

1. Describe four features of Java.
2. Discuss four differences between C++ and Java.
3. Explain with example how an instance becomes eligible for garbage collection.
4. How do we specify integer constants? Specify the three different ways of specifying an integer constant.
5. Give one key difference between character and string literal? Give one example.
6. Write an interactive program to check whether a given number is an Armstrong number or not.
7. How Java is an object oriented programming language?
8. Differentiate JRE & JVM. Give at least four points.
9. Justify statement for Java-“Write once; run anywhere any time.”
10. Why do we only use main() method to start a program?
11. Which is the stream concept used for I/O operations in Java? Explain with example.
12. How is lexical analysis performed? Which are the entities identified during analysis?
13. What is binding? Explain types of binding supported in Java.
14. What is operator precedence? Arrange the following operators in the order of their precedence : - , * , + , () , ^ , ! , ++ , -- , | , | , & , / , &&

Q-3 Select most appropriate answer from the given option.

[1 Mark each].

1. What is literal in Java programming?
 - a. Source code representation of fixed value.
 - b. Special type of class.
 - c. Special type of data type.
 - d. None of these.
2. _____ should be the value of y after execution of the following statements.
`int x = 10, y ;`
`x+=++x;`
`y = x--;`

- a. 12
 - b. 21
 - c. 20
 - d. None of the above.
3. An integer literal is of type long if and only if it has suffix-_____ in Java programming.
- a. D
 - b. F
 - c. L
 - d. O
4. What should be the output of following statements?
String str = new String("Java Platform");
char c = str.charAt(-1);
System.out.println(c);
- a. Print value of c variable.
 - b. Give compile time error.
 - c. Give run time error.
 - d. Print blank character.
 - e. None of the above.
5. Which one of the following is a valid comment in Java?
- a. /*This is a comment **/
 - b. /** This is a comment */
 - c. /Comment
 - d. All of the above.
6. _____ is virtual CPU that is simulated by a program to run on the actual CPU.
- a. JRE
 - b. JDK
 - c. JVM
 - d. JIT
7. Which of following select the portion of byte code and compile into executable code in real time?
- a. JRE
 - b. JDK
 - c. JVM
 - d. JIT
8. Which of the following application model facilitates the implementation of services as multitier application through well define component?
- a. J2ME
 - b. J2SE
 - c. J2EE
 - d. JDK
9. Which of the following is not a graphic character?
- a. Digit
 - b. Symbol
 - c. Enter
 - d. Blank space
10. Which escape sequence is use to moves cursor to the first column of current line?
- a. \r
 - b. \cr

- c. \r
 - d. \n
11. Which of the following is Reference data type?
- a. String
 - b. byte
 - c. int
 - d. long
12. Which of the following syntax is not true for the argument passed to main() method?
- a. String []args
 - b. String args[]
 - c. String args
 - d. None of the above.
13. Which of the following compiler of JVM cached native machine code when the method is first time call?
- a. JIT
 - b. HotSpot Compiler
 - c. Adaptive optimizer
 - d. Interpreter
14. In Java which of the following is use for 32- bit Unicode encoding?
- a. UTF – 32
 - b. Unicode -32
 - c. ASCII
 - d. UTF – 16
15. Which of the following is considered as individual unit of program by Java compiler?
- a. White space
 - b. Literals
 - c. Keyword
 - d. Tokens
16. Which of the following is a graphic character?
- a. Symbol
 - b. Enter
 - c. Backspace
 - d. Tab
17. What should be the data type of “ans” variable name which stores result without truncation, if
short s = 2000; byte b = 30;
ans = s * b;
- a. short
 - b. int
 - c. byte
 - d. Byte
18. Which of the following statement is invalid in Java?
- a. System.out.printf();
 - b. System.out.print();
 - c. System.out.print;
 - d. System.out.println();

Q-4 Fill in the blank.**[1 Mark each]**

1. The Java interpreter translates a Java program from _____ to machine language.
2. Another term for _____ is data hiding.
3. A(n) _____ is a set of instructions that tells the basic strategy for solving a problem.
4. _____ means that two or more methods can have different names in the same way that an English word can have two or more meanings.
5. In Java, a library of classes is called _____.
6. Every variable in Java must be _____ before it is used.
7. An assignment statement always has a single _____ on the left side of the assignment operator.
8. A(n) _____ is used to change the type of a value.
9. _____ was the name of the web browser written entirely in Java.
10. _____ was the name of team that was developing Java initially.
11. _____ is used to compile and _____ to run Java program.
12. The command line arguments in Java application are available as an instance of _____.
13. To optimize the execution of the Java bytecode, the JVM uses a _____ compiler.
14. _____ object represent standard output stream in Java.
15. Keyboard is linked with the _____ for easier way of writing Java program.
16. The grammar of Java defines both _____ grammar and _____ grammar.
17. A compiler always treats a _____ as a starting character of an escape sequence.
18. Double quote can be express using escape sequence in Java as _____.
19. Backslash can be expressed using escape sequence in Java as _____.
20. Converting values of primitive type to corresponding value of reference type is called _____.
21. Java uses _____ character set to represent text data.
22. The number of exponent bit in float data type is _____.
23. _____ can be assigned to a reference variable to make the variable to stop referring to any instance.
24. The calculation of $13\%5 =$ _____
25. The result of adding 2 byte value will be of type _____.
26. Precision loss can occur when converting a _____ value to type double.
27. Suppose after the following execution, the x will be _____.
String x = "7";
X+= "8";

Q-5 State True or False with justification.**[1 Mark each]**

1. Ice-cream is an illegal identifier in Java.
2. In Java, the double equal sign means "make equal to".
3. System.out is an example of a method.
4. The computer will not print an error message when a logic error occurs.
5. The Java compiler translates Java programs into machine language programs.
6. Java is a high-level language.
7. An upper-case letter is considered to be the same character as a lower-case letter in Java.
8. Java is a programming language meant for use on web only.
9. Java consists of three editions including Standard Edition, Enterprise Edition, and Micro

Edition.

10. JVM accepts to run both .class file and .Java file.
11. Platform independent language can run on variety of CPU.
12. Each class defined in Java is compiled into a separate class file whose name matches the class name.
13. A Single Java file may contain any number of classes with the main() method.
14. Applications are executed by using the class name that contains the applications main() method.
15. A byte in Java has 4-bit signed, a short has 8-bit signed.
16. The following definition means X has a string value of \.
String X = "\".
17. The operator ++ and -- have side effect, it will generate different result depending on the left and right position around variable.
18. Command line arguments may be passed to the Java application, which are available in the main method using its String[] parameter.
19. The size of char data type is 1 byte.
20. Java uses ASCII character set of the char data type.
21. The size of long is 4 byte.
22. A bool value can be cast to an int.
23. JRE does not include Java compiler.
24. The type void is not a type in Java.
25. Suppose X = 10, then X<<1=100 and X>>1=1.
26. ? Operator needs three operands.
27. The JVM is an interpreter that takes Java files and generates byte code.

Q- 6 Answer the following question in detail.

[4 Marks each]

1. Explain Architecture of Java virtual machine (JVM).
2. Explain key components of Java platform.
3. Explain each keyword used in main() method.
4. Explain role of JVM.
5. How Java program execute?
6. Explain memory management in Java.
7. What is type conversion? How it is differ from type casting? Explain.
8. Which class is used to take input from user? Explain with proper example.