



KERALA STATE RUTRONIX
C++, Java & Data Structures using C++
(PGDCA)

Question code

C4

Time : 2 hours

Maximum Marks : 100

Note: Write the answers for Questions from 1 to 30 in the MCQ answer sheet

Part - I Choose the most appropriate answer

(10 X 1 Mark = 10 Marks)

- 1) A is a special method used to initialize the instance variable of a class.
a) Member function b) Destructor c) Constructor d) Structure
- 2) Which of the following is used to interpret and execute Java Applet classes hosted by HTML?
a) applet screen b) applet show c) applet watcher d) applet viewer
- 3) The situation in a Linked list when START = NULL is
a) houseful b) overflow c) saturated d) underflow
- 4) Which keyword is used to inherit class?
a) inherit b) extends c) inheritance d) extend
- 5)inheritance is not supported by Java.
a) Single b) Multilevel c) Multiple d) Hierarchical
- 6) The package is imported by default in all Java programs.
a) java.awt b) java.applet c) java.lang d) java.util
- 7) Which of the following tool is used to compile Java code?
a) java b) javadoc c) javac d) jar
- 8) is a non linear data structure.
a) Stack b) Queue c) Linked list d) Binary tree
- 9) Which of the following is not a primitive data type?
a) short b) enum c) int d) byte
- 10) The function used to round off a value from 2.86 to 3.0 is
a) ceil(2.86) b) floor(2.86) c) roundup(2.86) d) roundto(2.86)

Part - II Fill in the Blanks

(10 X 1 Mark = 10 Marks)

- 11) is the smallest integer data type in Java.
- 12) The term Push and Pop is related to
- 13) JDK stands for
- 14) sorting algorithm is of divide and conquers type.
- 15) method is automatically called after **init** method of an applet class.
- 16) The code to declare an array of 10 **doubles** named **list** is
- 17) The loop has built in features to include an initialization statement and an increment statement.
- 18) are small Java programs developed for Internet applications.
- 19) The conversion of data type to another is called
- 20) The feature frees the memory used by an object that are no longer referenced.

Part - III State whether True or False

(10 X 1 Mark = 10 Marks)

- 21) The **finally** block will execute whether or not an exception is thrown.
- 22) Static data members need to be defined outside the class.

- 23) Pointers store the next data element of a list.
- 24) The private member is accessible from anywhere the object is visible.
- 25) **Name** and **name** refers to two different identifiers.
- 26) A C++ function can return multiple values to the calling function.
- 27) The extraction operator (>>) in C++ stops reading a string when a space is encountered.
- 28) A structure and class use similar syntax.
- 29) The **default** case is required in the **switch** selection structure.
- 30) The **continue** statement inside a **for** loop transfers the control to the top of the loop.

Part - IV Rewrite the loop in questions 31 and 32 to a while loop. (2 X 5 Marks = 10 Marks)

- 31)

```
for(int i=0; x<5;++i)
{ cout<<"*"<<endl;
}
```
- 32)

```
int n = 0;
int i=1;
do
{ cout <<i<<endl;
  i++;
} while ( i<=n);
```

Part - V Answer the following (Any Eight)

(8 X 5 Marks = 40 Marks)

- 33) Difference between Applications and Applets.
- 34) Write the equivalent C++/Java code to print the value of Z.

where $Z = \sqrt[3]{27 + 2a\sqrt{5x - y^{20}}}$

- 35) Write the C++/Java code equivalent for the following statement.
If weight is less than 50 and height is greater than 170 print "under- weight" and **count** is incremented by one.
- 36) Differentiate between **Call by Value** and **Call by Reference**.
- 37) Which language uses both compiler and interpreter? Give reason.
- 38) Differentiate Stack and Queue.
- 39) Write a C++/Java program to print a right angled triangle such as given here.
- 40) Write a program in C++ to check whether the given number is prime or not.
- 41) Explain **function overloading** with suitable examples.
- 42) Branching statements in Java.
- 43) What is the output when the following code fragment is executed?

```
int main()
{
    int x, y=10;
    x= y++;
    cout<<x;
    return 0;
}
```

```
*
**
***
****
*****
*****
*****
*****
```

Part - VI Explain the following (Any Two)

(2 X 10 Marks = 20 Marks)

- 44) Different type of looping statements, with syntax and examples.
- 45) Write a program in C++/Java to check whether a string is palindrome or not.
- 46) Write a program in C++/Java to accept 10 numbers using arrays and display those numbers in ascending order.
- 47) Explain **try**, **catch** and **finally** blocks with a simple program.