



MAULANA ABUL KALAM AZAD UNIVERSITY OF TECHNOLOGY, WEST BENGAL

Paper Code : PCC- CSD 403 Object Oriented Programming and Design

UPID : 004858

Time Allotted : 3 Hours

Full Marks : 70

The Figures in the margin indicate full marks.

Candidate are required to give their answers in their own words as far as practicable

Group-A (Very Short Answer Type Question)

[1 x 10 = 10]

1. Answer any ten of the following :

- (i) What is "Multiple Inheritance"?
- (ii) Mention two string functions of Java.
- (iii) Define "Class".
- (iv) What are the use of 'super' keyword in Java?
- (v) Define JRE.
- (vi) An abstract class can contain constructor. State Yes or No.
- (vii) Why java main() method is static?
- (viii) What is the difference between abstract method and non-abstract method?
- (ix) What are the two different ways to achieve abstraction?
- (x) What are the functions of the files System.in, System.out, and System.err?
- (xi) What is the difference between single and multilevel inheritance?
- (xii) Static method does not have access to the instance variable. Is it True or False?

Group-B (Short Answer Type Question)

Answer any three of the following :

[5 x 3 = 15]

2. What is an "Abstract Method"? What is the "Static Method"?
What is the advantage of the static method? [5]
3. Write a program in Java to implement method overloading by changing the number of arguments and the data types of arguments to calculate the area of a triangle, circle, square, and rectangle. [5]
4. Write program in Java to identify a prime number. [5]
5. Write four differences between Java and C++. Which one is better for future prospects? [5]
6. What are the differences between constructor and method? What is copy constructor? [5]

Group-C (Long Answer Type Question)

Answer any three of the following :

[15 x 3 = 45]

7. (a) What are the types of variables used in Java? [2]
(b) What is constructor? [3]
(c) How many ways a constructor can be overloaded? [3]
(d) Write a program in Java to overload a constructor by changing the number of parameters. [7]
8. (a) What are the differences between runtime polymorphism and compile time polymorphism? [4]
(b) What is Java final variable? [2]
(c) Write a program in Java to show that the final method is inherited. [4]
(d) Write a program in Java to use a superclass bank and use Axis Bank, SBI and ICICI as derived class and show method overriding and display the rate of interest of each bank. [5]
9. (a) Write a program on multilevel inheritance using class animal, cat and kitten and print "Cat is Meowing" and "Kitten is Meowing over the night." [6]
(b) Why multiple inheritance is not supported in Java? [4]
(c) Explain Different types of classes with diagrams used in Inheritance. [2]
(d) Write a java program with base class employee and derived class programmer and display the salary and bonus of the programmer. [3]
10. (a) What is interface? Explain it. [4]

(b) Why use Java interface?

[3]

(c) How to declare an interface?

[2]

(d) Write a java program to implement multiple inheritance using interface.

[6]

21. (a) Write a java program to design an interface calculator to perform addition, subtraction, multiplication and division.

[8]

(b) Write a program in Java to define an interface Shape and calculate the volume of Sphere and Cone using the interface shape.

[7]

*** END OF PAPER ***