

December 2009

Bachelor of Computer Applications (BCA) Examination

V Semester (Autonomous)

Introduction to Java

Time : 3 Hours]

[Max. Marks : 50

Note: All questions are compulsory. All questions carry equal marks.

1. (a) Explain the different features of Java over C++.
(b) What is type casting? Explain with example. Write down overall type of following expression :

$f/ch - (i * /)$

where ch is char, i is integer, f is float and / is of long type.

OR

- (a) Explain the signature of main method in Java. Write down the different signatures of main methods that are valid in Java.
(b) Write a program that will compute sales commissions. The following scheme is used to determine the commission rate :
- | Sale amount (Rs.) | Commission rate (%) |
|-------------------|---------------------|
| 1 - 5,001 | 8 |
| 5,001 - 10,000 | 10 |
| 10,000 and above | 12 |
2. (a) Write a program that will read 100 integers and displays the numbers in reverse order.
(b) write down the steps that are needed to create an array. How do you determine the length of an array? Give an example.

OR

- (a) Write a program using nested loop that will print output :
- ```
 1
 1 2 1
 1 2 4 2 1
1 2 4 8 4 2 1
```
- (b) Write an application that accepts the radius of a circle as its command line argument and displays the area of this shape.
3. (a) What are instance variable, instance methods static variables and static methods? How are they accessed? give an example.  
(b) What is constructor and its types? what are the special properties of constructor. How do we invoke it?

**OR**

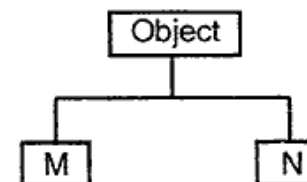
http://www.davvonline.com

Write a program to create a class Planet to encapsulate the name of a planet and the numbers of its moons. Another class named Solar System holds references to the nine planets. Both of these classes provide a method named display ( ) that output the encapsulated information. Also write the constructor functions for both the classes.

4. (a) What is inheritance and how does it helps as in creating new classes quickly? Also write different types of inheritance.  
(b) Explain the abstract and final keywords with example? Also write where they are used.

**OR**

- (a) Create the follownig hierarchy of classes :



M has two instance variables of type float and string, N has one instance variable of type double. Display the variables of class M and N.

- (b) Explain the this and super keywords with example.
5. (a) What are exceptions, how they can be handled? List some of the most common types of exceptions that might occur in Java.  
(b) What is Synchronization? When do we use it?

**OR**

- (a) What is a Package? Name five packages in the Java class libraries? If a source file does not contain a package statement, where are its classes and interfaces placed?  
(b) Write a Java program that declares an abstract class vehicle with an abstract method named numwheels ( ). Provide subclasses car and truck that each implement this method.

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