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**FIRST PRELIMINARY EXAMINATION 2012-2013**  
**COMPUTER APPLICATIONS**

Std: X  
Date: 28-9-2012  
Session II

MM: 100  
TIME: 2HRS

**This paper is divided into two sections. You are to answer all questions from Section A and only four questions from Section B.**

The intended marks for questions or parts of questions are given in brackets.

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**SECTION A**  
**[attempt all questions]**

**Question 1.**

- a. What is the difference between 52L and 52? [2]
- b. Define JAVA standalone applications. [2]
- c. Write a Java expression for the following expression. [2]  
$$x = \frac{-b + (b^2 - 4ae)}{2a}$$
- d. Name the command which prints text on the screen? [2]
- e. Define Variable. [2]

**Question 2.**

- a. Is 157A 1 a valid constant? [2]
- b. Are commas allowed in constant names? [2]
- c. Are blank spaces allowed in variable names? [2]
- d. Define the term 'Array'. How many types of arrays are available in Java? Name them. [4]

**Question 3.**

- a. Explain why an object is known as an 'instance of a class'. [2]
- b. State how the terms 'Encapsulation' and 'data hiding' are inter-related. [2]
- c. Explain how inheritance permits data reusability. [2]
- d. Write a short note on the various types of comment statements available in Java [4]

**Question 4. Write the following decision making statements using conditional operators. [10]**

- a. 

```
if(x<0) flag =1;
else flag=0;
```
- b.. 

```
if(x<=0) value=2*x;
if(x>0 && x<10) value = 5*x;
else value = 0;
```
- c. 

```
if(x>0) y=1;
else if(x==0) y=0;
else if(x<0) y=-1;
```
- d. 

```
if(percent >90) grade = "A";
else if(percent>70) grade = "B";
else grade ="C";
```
- e. 

```
if(m==0) System.out.println("Hello");
else System.out.println("Good day);
```

**SECTION B**  
**[attempt any four]**

**Question 5.**

Define a Java method to accept users choice regarding calculation of area of circle, area of square or area of rectangle from the user. Display the answer in the function itself. Call the above method in the main method. Also accept whether he wishes to continue the statement till '0' is entered.

**Question 6.**

Define a method to count the number of Upper case characters present in an accepted string. Call it in the main method

**Question 7.**

Write a program in Java to accept a name [first name, middle name, surname ] and print only initials.

**Question 8.**

Write a program to accept names of 10 countries along with their capital cities. Accept a name of a country, check for its existence in the array and display its capital city. Use relevant display messages.

**Question 9.**

Write a program to accept a number and check whether it is an Armstrong number or not. Display relevant messages.

An Armstrong num is a num that equals to the sum of its cube of its digits  
eg  $153 = 1*1*1 + 5*5*5 + 3*3*3 = 153$

**Question 10.**

A cloth showroom has announced the following festival discounts on purchase items:

Amount of purchase	Discount in %	
	Laptop	Tablets
Less than Rs. 1000	2%	5%
Rs. 1000 to Rs. 5000	20%	25%
Rs. 5001 to Rs. 10000	40%	50%
Above Rs. 10000	50%	60%

Write a java program to compute the net amount paid by the customer. Assume all required values to be inputted by the user. Make use of if and case structures.

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