



STAMFORD COLLEGE

SCHOOL OF COMPUTER SCIENCES DIPLOMA IN INFORMATION TECHNOLOGY

STC202 : OBJECT ORIENTED PROGRAMMING

Date : 11 March 2005 (Friday)

Time : 9.00 a.m. – 11.00 a.m.

Duration: 2 hours

Instructions to Candidates

Answer ALL questions.

Please ensure that this examination paper contains FOUR questions on FOUR printed pages before you start the examination.

Books, papers and other written materials are not allowed to be brought into the examination hall. A candidate who violates the examination rules of Stamford College or commits a malpractice will be disqualified from the examination.

Candidates may use calculators provided the calculators give no printout, have no work display facilities, are silent and cordless.

Write your Examination Index Number on each page of your answer booklet.

ANSWER ALL QUESTIONS.

Question 1

(a) Write declarations or Java statements to accomplish each of the following tasks:

(i) Display a dialog box containing the message “The product is” followed by the value of the variable *result*.
(2 Marks)

(ii) Convert a string to a floating-point number and store the converted value in *double* variable *age*. Assume that the string is stored in *stringValue*.
(2 Marks)

(iii) Give the method header for the following:

Method *intToFloat*, which takes an integer argument *number* and returns a floating-point result.

(2 Marks)

(iv) Declare an array with *ARRAY_SIZE* elements of type *float*, and initialize the elements to 0.
(2 Marks)

(b) Identify and correct the error in each of the following program segments.

(i) Assume
`int a[][] = [{ 1, 2 } , { 3,4 }];`
`a[1, 1] = 5;`
(3 Marks)

(ii) `Void f(float a)`
`{`
`float a;`
`System.out.println(a);`
`}`
(3 Marks)

(iii) The following code should output the even integers from 2 to 100:
`Counter = 1;`
`do{`
`System.out.println(counter);`
`counter += 2;`
`} While (counter < 100);`
(3 Marks)

(iv) `if (c ==> 7)`
`JOptionPane.showMessageDialog(null, “c is equal to or greater than 7”);`
(3 Marks)
(Total = 20 Marks)

Question 2

(a) What is the value of x after each of the following statements is executed?

(i) `x = Math.floor(10.5);` (3 Marks)

(ii) `x = Math.abs(-15.5);` (3 Marks)

(iii) `x = Math.ceil(Math.abs(-8.5));` (3 Marks)

(b) What do the following programs print?

(i)
`System.out.print("**");`
`System.out.println("***");`
`System.out.println("*****");`
`System.out.print("*****");`
`System.out.println("**");` (5 Marks)

(ii)
`public class Mystery {`
`public static void main(String args[])`
`{`
`int y , x = 1, total = 0;`
`while (x <=5)`
`{`
`y = x * x;`
`System.out.println(y);`
`total += y;`
`++x;`
`}`
`}`
`}` (6 Marks)

Question 2**Question 3**

- (a) Write a simple Java Program that prints the message “MY FIRST JAVA PROGRAM”.
(5 Marks)

- (b) Convert the following **while-loop** into a **for-loop**.

```
int x = 1;
int sum = 0;
while (sum < 10) {
    sum = sum + x;
    x++;
}
```

(5 Marks)

- (c) Write a Java Program that calculates the squares and cubes of the numbers from 1 to 5 and prints the resulting values in table format as shown below:

Number	Square	Cube
1	1	1
2	4	8
3	9	27
4	16	64
5	25	125

(10 Marks)

- (d) Write a Java application using methods to display the following output:

**Object Oriented Programming
13.0**

Your program should contain two methods. The first method called *print* will display the message “Object Oriented Programming”. The return type for this method is *void*.

The second method called *squareroot* with return type *double* will use the *sqrt* build-in method in the Math class to calculate the square root of 169.0.

(10 Marks)

(Total = 30 Marks)

(b)

Question 4

(a)

Explain the concept of Method Overloading.

(5 Marks)

(b)

Define the terms superclass and subclass.

(5 Marks)

(c)

Explain the following:

(i) Object

(ii) Constructor

(4 Marks)

(Total = 14 Marks)

- END OF PAPER -

