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St. Nicholas College Naxxar Boys Secondary
Half-Yearly Examinations
February 2015

Track/Level
5-8

FORM 4

COMPUTING

TIME: 2h

Name _____

Class _____

ATTEMPT ALL QUESTIONS.

1. WHAT are the following statements USED for? MATCH the statements with their description. [5]

a.	<code>System.out.print (.);</code>	Declare a variable
b.	<code>x = Keyboard.readInt();</code>	Process
c.	<code>int x;</code>	Simple if statement
d.	<code>final double PI = 3.142;</code>	Printing on the screen
e.	<code>x = y + z;</code>	else part of an if statement
f.	<code>p = 23;</code>	Using a Math class function
g.	<code>fullName = name + + String;</code>	Declare a constant
h.	<code>if (age > 18)</code>	Reading an integer from the keyboard
i.	<code>else {System.out.print ();}</code>	Concatenation of two strings
j.	<code>y = Math.abs(x);</code>	Putting a value into a variable

2. What variable TYPE would you declare in your program to store the following values? *The first one has been done for you as an example.* [10]

a.	21	<i>Integer</i>
b.	C	
c.	*	
d.	Matthew	
e.	2.14	
f.	45,354,535,423,534	
g.	150	
h.	The sky is blue.	
i.	365	
j.	453.253	
k.	12344M	

3. What is the DIFFERENCE between a VARIABLE and a CONSTANT?

[2]

Variable _____

Constant _____

4. WHAT are these Math functions used for? MATCH the following Math FUNCTIONS with their USE.

[5]

Math Functions	Use
a. abs(x)	Returns the smallest number
b. round(x)	Returns the square root of x
c. max(x,y)	Absolute value of x
d. min(x,y)	Returns the cosine of x
e. pow(x,y)	Returns the sine of x
f. sqrt(x)	Rounds x to the nearest digit
g. random()	Returns the tangent of x
h. cos(x)	Returns x to the power of y
i. tan(x)	Returns the biggest number
j. sin(x)	Returns a random number between and 1

5. FILL IN the blanks of the following statements so that they MATCH their description.

a. Given variables **x** and **y**, which are read from the keyboard, find the BIGGEST number.

[4]

```
_____ x,y,biggest;  
System.out._____ (Enter number 1);  
x = Keyboard.read_____( );  
System.out._____ (Enter number 2);  
_____ = Keyboard.read_____( );  
_____ = Math._____(x,y);
```

b. Given the variables **l** and **b**, which store the length and breadth of a room, output whether the room is rectangular or square.

[3]

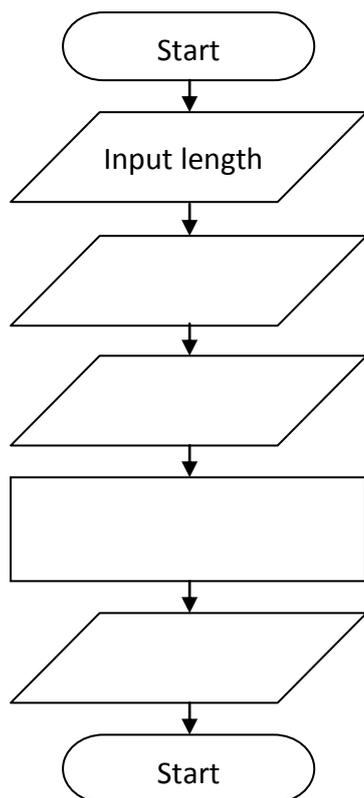
```
_____ (l _____ b){  
    System.out._____ (The room is square);  
} _____ {  
    System.out._____ (The room is _____);  
}
```

6. When using the IF statement, WHAT do the following logical operators mean?

[3]

a.	==	
b.	!=	
c.	>	
d.	>=	
e.	<	
f.	<=	

7. FILL IN the following flowchart that describes a program that accepts the length, breadth and height of a rectangle, from the user, and works out its volume. Display the volume on the screen. [4]



8. WRITE the method in Java for the flowchart in question 6.

[6]

```
public static void main (String[] args){
```

```
}
```

9. DEFINE the following types of errors. [4]

- a. Syntax: _____
- b. Semantic: _____
- c. Logical: _____
- d. Runtime: _____

10. FIND the ERRORS in the following statements and state whether they are SYNTAX, SEMANTIC, LOGICAL or RUNTIME errors. [14]

		Error	Type of Error
a.	system.out.print (Hello World!);		
b.	area = length + breadth;		
c.	x = Keyboard.readInt()		
d.	int a = Keyboard.readDouble();		
e.	System.out.print (Hello World!);		
f.	if (x = y)		
g.	int num = number 5;		

11. Write Java STATEMENTS for each of the following TASKS. [10]

- a. Declare a variable called month that stores months in words (e.g. December):

- b. Declare a variable called price that stores decimal numbers

- c. Display the message 'Enter number on the screen:'

- d. Input a number from the keyboard and store it into an integer variable called num

- e. Calculate the area of a rectangle

12. Peter needs a program to help him easily work out the BILLS for visitors to his museum. He CHARGES children between 6 and 12 years €2, students between 12 and 20 years €5, adults €7 and senior citizens (over 60 years) €5.
He needs the program to work out the bill and show the total amount to pay on the screen.

On a separate sheet:

- a. Draw the FLOWCHART for this situation. [10]
- b. Write the PROGRAM in Java. [20]

END OF PAPER