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IT Foundation using C# EXAM 1 Instructor: Vallejo

Note: The test is worth **100 points**. **Show all your work** for each problem. No partial credit will be given if no work is shown for each answer. Read the entire description to each question before answering the question. **Good Luck!**

True / False (2 points each)

		Circle One
1.	A block (**{ }**)can contain more than one statement.	TRUE / FALSE
2.	Every program must have a function called Main.	TRUE / FALSE
3.	The type **int** is signed.	TRUE / FALSE
4.	Multi-line comments are started by ***//***.	TRUE / FALSE
5.	Variables are used only for storing constants.	TRUE / FALSE
6.	All statements are terminated by a comma.	TRUE / FALSE
7.	A variable name may begin with an underscore (_).	TRUE / FALSE
8.	**\n** is used by **WriteLine** to go to the next new line.	TRUE / FALSE
9.	Upper- and lower-case letters are significant for names.	TRUE / FALSE
10.	The type **char** is Unicode (2 bytes).	TRUE / FALSE

Multiple Choice (3 points each)

11. Which feature will execute a block of code at least once:
    A. **while**
    B. **for**
    C. **do-while**
    D. **foreach**

12. An **int** variable occupies:
    A. One byte
    B. 9 bits (1 for parity)
    C. Four bytes
    D. 7 bits (for unsigned)

13. What function is used to read in a string:
    A. Console.WriteLine
    B. Console.Read
    C. Console.Write
    D. Console.ReadLine

14. Which is an INVALID statement:
    A. `x = x / -1;`
    B. `y = y + 2`
    C. `z = z + z;`
    D. `t += t;`

15. What does X == Y mean?
    A. X is assigned to Y
    B. Y is assigned to X
    C. X is compared to Y
    D. None of the above

DOES X REFLECT Y

16. Which of the following is NOT a logical operator:
    A. ;
    B. ||
    C. &&
    D. !

17. Which is an invalid type of Field:
    A. readonly
    B. get
    C. const
    D. None of the above

18. **break** is used to:
    A. Exit a program
    B. Exit stage right
    C. Exit a function
    D. Exit a loop

19. C# ignores:
    A. Whitespace
    B. Braces
    C. Commas
    D. Semicolons

20. What is the significance of **while (true)**
    A. It is an invalid expression
    B. It is an infinite trip
    C. It is an infinite statement
    D. It will never stop

21. What is the result of the following statement for x = 4? (5 points)

```
result = X + X++;
result = --X + X;
```

(x) + (x+1)

(x-1) + (x)

22. What are the basic arithmetic operations? Show the operational signs. (5 points)

EQUALS	ADD	SUBTRACT	MULTIPLY	DIVIDE	MOD
=	+	-	*	/	%

23. What are the basic conditional operations (less than, equality, etc.)? What are the basic logical operations? (5 points)

==, !=, <, >, &, |

&, ^, |, &&

24. Check if the following *if* expressions below result in TRUE or FALSE? (5 points)

A.

```
usCnt = 10; usSum = 10;
if (usSum++ == usCnt)
   {
   etc...
   }
```

TRUE (FALSE)

B.

```
usCnt = 10; usSum = 10;
if (usSum == ++usCnt)
{
etc...
}
```

TRUE (FALSE)

25. What is the value of usSum after the following code segment? (5 points)

```
usSum = 10; usCnt = 2;
switch (usCnt)
   {
   case 3:
      {
      usSum = usSum + 2;
      break;
      }
   default:
      {
      break;
      }
   case 2:
      {
      usSum = usSum * 3;
      goto case 3;
      }
   }
```

usSum = 10

26. ***Circle*** the COMPILER/SYNTAX errors in this program (5 points)

```
static void Main( )
{
int   iSum;
int   iCnt=Sum, iValue; iTotal;
char  chChar = "a";

iSum = chChar
;
while (iSum = 100);
   {
   iSum = iSum + 1;
   }
}
```

27. Given the following program what will the last value of usCnt be when the program completes execution? Is there anything unusual about this program? What does it show and what do you conclude from this? (10 points)

```
using System;
class Test
{
   static void Main( )
   {
   uint  usCnt;
   uint  usSum = 0;

   for (usCnt = 10; usCnt >= 0; usCnt--)
      {
      Console.WriteLine("{0}",usCnt);
      usSum = usSum + usCnt;
      }
   }
}
```

TRIGGER "0"

(0)-(1) = -1

WRITES "-1"

USSUM = -1

usCnt is not Defined => No Looping or display

28. What will the following program display? (10 points)

```
using System;
class Test
{
   static void Main( )
   {
   int   iX;
   int   iY;

   iX = 15321;
   while (iX != 0)
      {
      iY = iX % 10;
      Console.Write(iY);
      iX /= 10;
      }
   Console.WriteLine();
   }
}
```

Mod

=> iX = iX / 10 || iY = 15321 % 10 || 1

Display will be 1

29. We have a stack object (10 points):

- What is while ( ) statement do?
- What is IsEmpty?
- What is Pop()?
- What is {0}?
- What is the code below going to do?

The Pop method retuns the top most item from the stack

```
while (!stack.IsEmpty)
    {
       Console.WriteLine("Popping {0}", stack.Pop());
    }
```

30. What is the difference between a "Class" and a "Struct" in C#? (10 points)

- Classes provide a way to have independent variables together. They act as a container to group various properties and attributes of an object.

- STRUCT is a container which contains fields when are part of a predifined list