Error Check and output) JAVA

Check the Error and Rewriter :-

1. Public Static void main()
{
Int count=10;
System.out.println(Count);}

2. public Static Void main()
{
intI,j=10;
i=10;
System.out.println(I+ “, ’+J);
System.out.println(“JAVA”):
}

3. Public Static Void main(){
Int x=’a’;
System.out.paintln(X);
}

4. public static void Main()
{
double PI; int P;
Pi=3.14765;
P=22;
Pi=3.14;
System.out.println(pi/2);
}

5. ine i=2;
System.Out.printlnIi);
i+=2;
System.out.println(“hi);

6. int i=4;z=12;;;

Q2. Find the error and rewrite :

1. Int a=2,b=6
System.out.println(a+ “, ”+b);;

2. Chat c=’A’,b=65;
System.ouT.println(a+ “, ”+b),

3. Float a=2.3,b=6.567;
System.ot.printn(a+ “, ”+b)

4. int a=32 ; b=6;
System.Out.Println(a+ “, ”+b);

5. float A=2.3,b=6.567;
System.out.println(a+ “, ”+b);

6. Int a=65 ; b=6;
System.ouT.println(a+ “, ”b):

7. int a=32 ; b=6,
system.out.print(a+ “, ”+c);

8. float A=2.3,b=6.567;
System.out.Println(a- “,’ +b);

9. Int a=65 ; b=6;
System.out.println(A+ “, ”+b);

10. int a=32 ; b=6,
System.out.Println(a+ “, ”+b);

11. float A=2.3,b=6.567;
system.Out.println(+a “, ”+b);

12. Int a=65 ; b=6;
System.out.Println(a++ “, ”+b):

13. Int a=2.25 : b=6,
System.Out.Println(a- “, ”b):

14. InT a=65 ; b=6;
System.out.Printan(a+ “, ”+b):

15. int a=32 , b=6;
System.Out.Print(A+ “, ”+B);

Basic Input Output and Process

1. WAP to add 2 numbers[R=a+b]
2. WAP to add 4 numbers[R=a+b+c+d]
3. WAP to multiply 3 numbers[R=a*b*c]
4. WAP to find average 5 numbers[R=(a+b+c+d+e)/5]
5. WAP to display age after 15 years.[nage =age+15]
6. WAP to display a3 numbers [R=a*a*a]
7. WAP to find the area of circle [A=3.14*r*r]
8. WAP to find the area of squire .[A=a*a]
9. WAP to find the area of rectangle [A=a*b]
10. WAP to find the perimeter of rectangle[A=2*(l+ b)]
11. WAP to find the circumference of circle [C=2*3.14*r]
12. WAP to swap the values of two variables.[a= a + b; b=a – b; a= a – b;]
13. WAP to input Hours, Minutes and Seconds and display in seconds.[TS=H*60*60+M*60+S]
14. WAP to input cost and display cost after increasing 25% [cost+(cost*25)/100]
15. WAP to display squire of a numbers [a*a]
16. WAP to find the volume of sphere.[v=4/3*3.14*r3]
17. WAP to find the area of triangle using HEROS formula[a=√(s(s-a)(s-b)(s-c)) , s= (a + b + c)/2]
18. WAP to take principal, rate and time and display C.I. (Compound Interest) CI=p*(1+R/100)^T
19. WAP to calculate sum of 5 subjects & find percentage[TOT=s1+s2+s3+s4+s5,Per=TOT/5]
20. WAP which accept temperature in Fahrenheit and print it in centigrade[c=5/9*(T-32)]
21. WAP which accept temperature in centigrade and print it in Fahrenheit[F=(1.8*T)+32]
22. WAP which accepts a character and display its ASCII value like [A=65,a=97]
23. WAP to calculate simple interest. [SI=PRT/100]
24. WAP to find gross salary [GS=BASIC+DA-PF+HRA]

Operators

Which perform some operations

$$A = B + C$$

- *Addition*
- *Subtraction*
- *Multiplication*
- *Division*
- *Check*
- *Comparison*
- *Process*

operands/variables/data/value/identifiers

Assignment or Copy Operator

=

x=5; Assignment

y=x; Copy / Duplicate

x=x+1; }-> x+=1;
x=x+y;}-> x+=y;

Relational Operator

(used for check and compare)

(<,>,<=,>=,!=,==)

T/F

Example:
if x=8,y=7;
R=x>y;
R=1;

R=x<y;
R=x>=y;
R=x<=y;
R=x!=y;
R=x==y;

Increnent and Dicrement

++/--

Pre/Post
++x x++

if x=7 then

x++
++x }-> x=x+1 }->x+=1}-> 8

if x=8;

z=x++; z=++x;
x= x=
z= z=

Arithmetical Operators

+,*,-,/,%

/ : 5/2=2(int) or 2.5(float)
% : 5%2=1,13%7=6,10%7=3(Rem.)

if x=5,y=8;		x	y	z
1	z=x+y;	5	8	13
2	z=x++ +y;	6	8	13
3	z=++x +y;	6	8	14
4	z=x+ ++y;	5	9	14
5	z=x+ y++;	5	9	13
6	z=++x+ ++y;	6	9	15
7	z=++x+ y++;	6	9	14
8	z=x++ + ++y;	6	9	14
9	z=x++ + y++;	6	9	13
10.	x+=x++ + ++y;	20		

if x=6	if x=6	if x=6	if x=6	if x=6	if x=6	if x=6	if x=6	if x=6	if x=6

y=x++;
z=++x
	y=++x;
	z=x++;
		y=x++;
		z=++y;
			y=++x;
			z=++x
				y=x++;
				z=y++;
					y=++x;
					z=y++;
						y=--x;
						z=--x;
							y=x--;
							z=--y;
								y=++x;
								z=y++;
								x++;
								z++;
								y++;
								x= 8
								y= 9
								z= 8
									y=x++;
									z=++y;
									x++;
									z++;
									y++;
									x= 8
									y= 8
									z= 8

x= 8 y= 6 z= 8	x= 8 y= 7 z= 7	x= 7 y= 7 z= 7	x= 8 y= 7 z= 8	x= 7 y= 7 z= 6	x= 7 y= 8 z= 7	x= 4 y= 5 z= 4	x= 5 y= 5 z= 5		

Ternary Operator/Conditional Operator

Syntex:

? :

R=(cond)?Value1:Value2;

T
F

Example:

if x=10,y=17;

R=(x>y)?x:y; *R=value of y*

R=12+x>y?x:y; ***R=>***

R=12+(x>y)?x:y; ***R=>***

working of && and ||

&& Ist
|| IInd

R=(cond1)LO(cond2)LO(cond3)

if x=5,y=7 then R=?

R=(x>y);
R=
R=!(x>y);
R=
R=!!(x>y);
R=
R=!!!(x>y);
R=

Not !
!T=F
!F=T

Logical operator

&& AND (All True)
|| OR (Single True)
! NOT (T-> F, F->T)

Syntex:

R=(cond1)LO(cond2)LO(cond3)

&&/||

Example:

if x=3,y=7,z=4 then value of R =?

R=(x>y)&&(y>z)&&(z>x);
R=
R=(x>y)||(y>z)||(z>x);
R=
R=(x>y)&&(y>z)||(z>x);
R=
R=(x>y)||(y>z)&&(z>x);
R=

ASCII Value of
A=65
a=97

Increment and Decrement if x=13, r=11,p=10, q=8then find the value of x, r, p, q after execution?

1. r+=p*++x + ++q; x=14, r=160,p= 10, q=9
2. q-=x++ + ++x; x=15, r=11,p= 10, q=-20
3. r=q++ + p--; x=13, r=18,p= 9, q=9
4. p+=++x*q++ + ++p; x=14, r=11,p= 134, q=9
5. r=p+ ++q+ --q +x; x=13, r=40,p= 10, q=8
6. r=(p++*q)*x++ -r++; x=14, r=1029,p= 11, q=8
7. q=(++p*x++)+r +q++; x=14, r=11,p= 11, q=162
8. x=(++x)+r; x=25, r=11,p= 10, q=8
9. x+=(p+'F'+'a'+p++); x=200, r=11,p= 11, q=8
10. r-=('a'+'J'+++x); x=14, r=-174,p= 10, q=8

If x=11,r=3; then find the value of r, x=?

1. r=10*++x + 1; r=121, x=12
2. r+=++x + x++; r=27, x=13
3. r=r*x++ + x; r=45, x=12
4. r=++x*2; r=24, x=12
5. r=x++*2; r=22, x=12
6. r=(x++)*x++ -r; r=129, x=13
7. r=(2*x++)+r; r=25, x=12
8. r=(2*++x)+r; r=27, x=12
9. r=('A'+'a'+x); r=173, x=11
10. r=('A'+'b'+x++) ; r=174, x=12

if a=7,p=10,q=7 find the value of a, p, q=?

1. p+=++a + --a +q*a; a=7, p=74, q=7
2. p*=q+ ++a + ++p ; a=8, p=286, q=7
3. p+= q++ + ++a- --q; a=8, p=18, q=7
4. p=p*q/a-p; a=7, p=0, q=7

Ternary Operator/Conditional Operator Find the value of k=? After execution the statement.

1. k=10+50>1500?20:30; k= 30
2. k=200<100?21:20; k= 20
3. k=200+100<=100?101:11; k= 11
4. k=300+400>=500?112:222; k= 112
5. k=10>=10?20*2:30+2; k= 40
6. k=2*(1200>100?101:20); k= 202
7. k=1000+500>1500?25:20; k= 20
8. k=100+500>100?21:10; k= 21
9. k=200+200<100?10:11; k= 11
10. k=500+1000>500?12:22; k= 12
11. k=3+4-7*(200+100<=100?101:11); k= -70
12. k=3*4/3*7+400>=500?112:222; k= 222

Logical Operator if the a =5, b =6 , c= 7 then find the value of Exp=? After execution

Exp =!!(a>b) || (a<c)&&(a>b); Exp = 0
Exp = (a<b) || !(b>c); Exp = 1
Exp = !(b>c)*10; Exp = 10
Exp = (a>c) || (b<c) &&!!!(a>c); Exp = 1
Exp =!!(a>c)&&!!(b<c)&&!!(a>b); Exp =
Exp = (a>b) && (a<c); Exp = 0
Exp = (a<b) || (b>c); Exp = 1
Exp = !(b>c); Exp = 1
Exp = (a<c) && (b<c) || !(a>c); Exp = 1

Type 1

```
x=5,y=9;cout<<"1: "<<x<<" , "<<y<<endl;
x=5,y=9;cout<<"2: "<<x++<<" , "<<y<<endl;
x=5,y=9;cout<<"3: "<<++x<<" , "<<y<<endl;
x=5,y=9;cout<<"4: "<<x<<" , "<<y++<<endl;
x=5,y=9;cout<<"5: "<<x<<" , "<<++y<<endl;
x=5,y=9;cout<<"6: "<<x++<<" , "<<y++<<endl;
x=5,y=9;cout<<"7: "<<++x<<" , "<<y++<<endl;
x=5,y=9;cout<<"8: "<<x++<<" , "<<++y<<endl;
x=5,y=9;cout<<"9: "<<++x<<" , "<<++y<<endl;
x=5,y=9;cout<<"10: "<<x--<<" , "<<y--<<endl;
```

```
1: 5 , 9
2: 5 , 9
3: 6 , 9
4: 5 , 9
5: 5 , 10
6: 5 , 9
7: 6 , 9
8: 5 , 10
9: 6 , 10
10: 5 , 9
```

Type 4

```
x=5;
cout<<"1: "<<x<<" , "<<x<<endl;
cout<<"2: "<<x++<<" , "<<x++<<endl;
cout<<"3: "<<++x<<" , "<<++x<<endl;
cout<<"4: "<<x<<" , "<<x++<<endl;
cout<<"5: "<<x<<" , "<<++x<<endl;
cout<<"6: "<<x++<<" , "<<x++<<endl;
cout<<"7: "<<++x<<" , "<<x++<<endl;
cout<<"8: "<<x++<<" , "<<++x<<endl;
cout<<"9: "<<++x<<" , "<<++x<<endl;
```

```
1: 5 , 5
2: 6 , 5
3: 9 , 8
4: 10 , 9
5: 11 , 11
6: 12 , 11
7: 15 , 13
8: 16 , 16
9: 19 , 18
```

Type 2

```
x=5,y=9;
cout<< 1: "<<x<<" , "<<y<<endl;
cout<<"2: "<<x++<<" , "<<y<<endl;
cout<<"3: "<<++x<<" , "<<y<<endl;
cout<<"4: "<<x<<" , "<<y++<<endl;
cout<<"5: "<<x<<" , "<<++y<<endl;
cout<<"6: "<<x++<<" , "<<y++<<endl;
cout<<"7: "<<++x<<" , "<<y++<<endl;
cout<<"8: "<<x++<<" , "<<++y<<endl;
cout<<"9: "<<++x<<" , "<<++y<<endl;
cout<<"10: "<<x--<<" , "<<y--<<endl;
```

```
1: 5 , 9
2: 5 , 9
3: 7 , 9
4: 7 , 9
5: 7 , 11
6: 7 , 11
7: 9 , 12
8: 9 , 14
9: 11 , 15
10:11 , 15
```

Type 5

```
x=10;
cout<<"1: "<<x<<" , "<<x<<endl;
cout<<"2: "<<x--<<" , "<<x<<endl;
cout<<"3: "<<--x<<" , "<<x<<endl;
cout<<"4: "<<x<<" , "<<x--<<endl;
cout<<"5: "<<x<<" , "<<--x<<endl;
cout<<"6: "<<x--<<" , "<<x--<<endl;
cout<<"7: "<<--x<<" , "<<x--<<endl;
cout<<"8: "<<x--<<" , "<<--x<<endl;
cout<<"9: "<<--x<<" , "<<--x<<endl;
```

```
1: 10 , 10
2: 10 , 10
3: 8 , 9
4: 7 , 8
5: 6 , 6
6: 5 , 6
7: 2 , 4
8: 1 , 1
9: -2 , -1
```

Type 3

```
x=10;
cout<<"1: "<<x<<endl;
cout<<"2: "<<x++<<endl;
cout<<"3: "<<++x<<endl;
cout<<"4: "<<(x++)<<endl;
cout<<"5: "<<(++x)<<endl;
cout<<"6: "<<x<<endl;
```

```
1: 10
2: 10
3: 12
4: 12
5: 14
6: 14
```

Type 6

```
x=10;
cout<<"1: "<<x<<endl;
cout<<"2: "<<x--<<endl;
cout<<"3: "<<--x<<endl;
cout<<"4: "<<(x--)<<endl;
cout<<"5: "<<(--x)<<endl;
cout<<"6: "<<x<<endl;
```

```
1: 10
2: 10
3: 8
4: 8
5: 6
6: 6
```

Extra:

Q1. If x=7,y=17,z=27

1. K=x++ *++x + ++y –z++ 54
2. K='X'+ ++y +'N' – z++ 157
3. K= ++z*3 +'O' + ++y +'t' 297
4. K=z++ + x++ +'R' +'f' 218

Q2. If x=28,b=17

b*=x++ * ++b +x++ +'r' +'n' *3 13624

Q3. If x=28,b=18

b+=++x * 'A' +'B' + ++'y' 2091

Q4. If a=17,b=13,c=19

K=!!(a>(b+13))&&!!!(b>(c-8))!!!(c>a) 0

OPERATORS

These are those lexical units that trigger some computation when applied to variables and other objects in an expression. Following are some operators used in C++ Unary operators: Those which require only one operand to trigger. e.g. & , + , ++ , -- ! .
Binary operators: these require two operands to operate upon. Following are some of the
Binary **operators.**

Relational Operator:

< less than
a> Greater than
<= Less than equal to.
>= greater than equal to.
== equal to.
!= not equal to.

Conditional operator: ? (question) : (colon)

Assignment Operator:

= assignment operator
*= Assign Product.
/= Assign quotient
%= assign Remainder
&= Assign bitwise AND
^= Assign bitwise XOR.
|=Assign bitwise OR

Conditional operator (?)

The conditional operator evaluates an expression returning a value if that expression is true and a different one if the expression is evaluated as false. Its format is:
condition ? result1 : result2
e.g 7==5 ? 4 : 3 // returns 3, since 7 is not equal to 5.

Comma operator (,)

The comma operator (,) is used to separate two or more expressions that are included where only one expression is expected. When the set of expressions has to be evaluated for a value, only the rightmost expression is considered.
For example, the following code:
a = (b =3 , b +2);
Would first assign the value 3 to b, and then assign b+2 to variable a. So, at the end, variable a would contain the value 5 while variable b would contain value 3.

Arithmatic operators :

1. + Addition
2. _ substraction
3. A* Multiplication
4. / Division
5. % Remainder.

Logical Operators :

&& - logical AND || - Logical OR

Explicit type casting operator

Type casting operators allow you to convert a datum of a given type to another. There are several ways to do this in C++. The simplest one, which has been inherited from the C language, is to precede the expression to be converted by the new type enclosed between parentheses ( ) :

```
int i;
float f =3014;
i = ( int ) f;
```

The previous code converts the float number 3.14 to an integer value (3), the remainder is lost. Here, the typecasting operator was (int). Another way to do the same thing in C++ is using the functional notation: preceding the expression to be converted by the type and enclosing the expression between parentheses:

```
i = int (f );
```

Both ways of type casting are valid in C++.

sizeof()

This operator accepts one parameter, which can be either a type or a variable itself and returns the size in bytes of that type or object:

```
a= sizeof (char);
```

This will assign the value 1 to a because char is a one-byte long type.

The value returned by sizeof is a constant, so it is always determined before program execution.

Practice Session:

1. What is the name of the function that should be present in all c++ program?
Ans:main()
2. What are C++ comments?
Ans: comments are internal documentation of a program which helps the program for
many purposes.
3. What is indentation of a program?
Ans: It is the systematic way of writing the program which makes it very clear and
readable.
4. What is #include directives?
Ans :it instructs the compiler to include the contents of the file enclosed within the brackets
into the source file.
5. What is role of main() in c++ program?
Ans:This is the first line that a C++ compiler executes. Program starts and end in this
function.
6. What is a header file?
Ans:Header file provide the declaration and prototypes for various token in a program.
7. What is the purpose of comments and indentation?
Ans: the Main purpose of comments and indentation is to make program more readable
and understandable.
8. What are console input /output functions?
Ans: Console I/O functions are cout and cin.
9. Write an appropriate statement for each of the following:
1. Write the values for a&b in one unseperated by blanks and value of after two blanks
lines.
Ans: cout<<a<<b<<endl<<endl<<c;
2. Read the values for a,b and c.
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Ans: cin>>a>>b>>c;
3. Write the values for a and b in one line, followed by value of c after two balnk lines.
Ans: cout<a<<b<<'\n\n'<<c;
10.What type of errors occurs while programming?
Ans: There are three types of errors generally occur are:
1.Syntax error
2.Semantic error
3.Type error.
11. How '/' operator is different from '%' operator?
Ans: '/' operator is used to find the quotient whereas % operator is used to find the remainder.
12. Which type of operator is used to compare the values of operands?
Ans: Relational operators.
13. How will you alter the order of evaluation of operator?
Ans: We can use parentheses to alter the order of evaluation of an equation.
14. What is the unary operator? Write 2 unary operator .
Ans : The operator which needs only one operand is called as unary operator .The '++'
(increment) and '_ _'(decrement) operators.
15. What is output operator and input operator?
Ans: The output operator ("<<") is used to direct a value to standard output. The input
operator (">>") is used to read a value from standard input.
16. What will be the output of following code:

```
void main()
{
int j=5;
cout<<++j<<j++<<j; // in cascading processing starts from right to left
}
```

Ans. 7 5 5
17. What will be the output of following code:

```
void main()
{
int j=5;
cout<<++j + j++ +j++; // values will be: 6 6 7 (From left to right)
}
```

Ans. 19
18. What will be the output of following code:

```
void main()
{
Int j=5, k;
k= a++ +a+ ++a;
cout<<k;
}
```

Ans. 18 (Because in evaluation of expression first of all prefix are evaluated, then it's value is
assigned to all occurrences of variable)