

Problems C++

Chapter :2

Examples:

1. Write program to print the address & value of the variable: [Pg-40]

```
# include <iostream.h>
# include <conio.h>
void main()
{
clrscr();
int i=10;
cout << "\n Address of the var.." << &i;
cout << "\n Value of the var.." << i;
getch();
}
```

Output:

```
Address of the variable...0x8feafff4
Value stored in the variable...10
```

2. Program to demonstrate implicit type conversions: [Pg-47]

```
# include <iostream.h>
# include <conio.h>
# include <iomanip.h>
void main()
{
clrscr();
int l;
float f;
double d;
long double ld;
unsigned int ui;
unsigned long int uli;
```

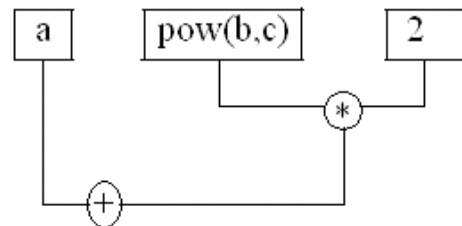
```
i=5;
f=2;
d=3;
ld=3;
ui=6;
uli=4;
cout << "\n Size of long double.."
<< sizeof(ld*d) << '\t' << ld*d;
cout << "\n Size of double.."
<< sizeof(d*f) << '\t' << d*f;
cout << "\n Size of float.."
<< sizeof(f*i) << '\t' << f*i;
cout << "\n Size of unsigned long
int.." << sizeof(uli*f) << '\t'
<< uli*f;
cout << "\n Size of unsigned int.."
<< sizeof(ui*i) << '\t' << ui*i;
getch(); }
```

Sizeof long double...	10	9
Sizeof double...	8	6
Sizeof float...	4	-10
Sizeof float...	4	8
Sizeof unsigned long int...	4	8
Sizeof unsigned int...	2	65506

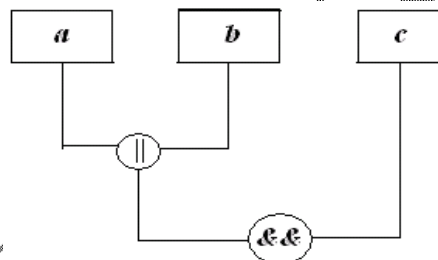
Exercises:

1. Determine the order of evaluation :[Pg-51]

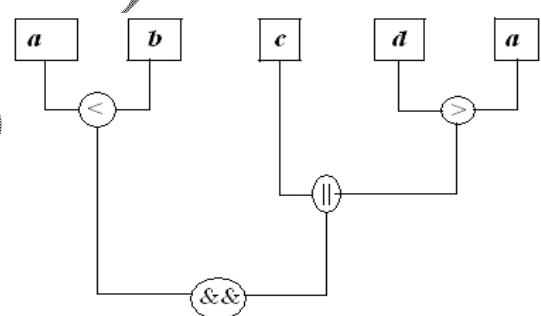
i)  $a + \text{pow}(b,c) * 2$



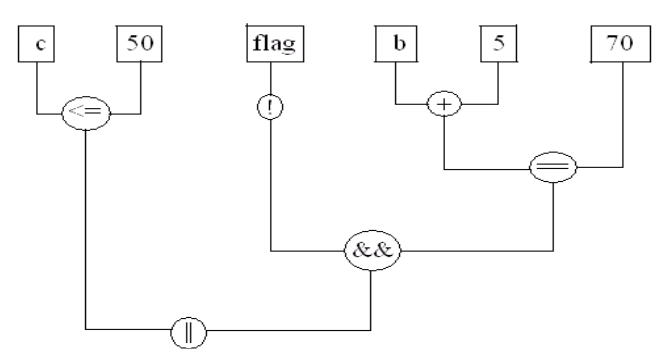
ii)  $a || b \&\& c$



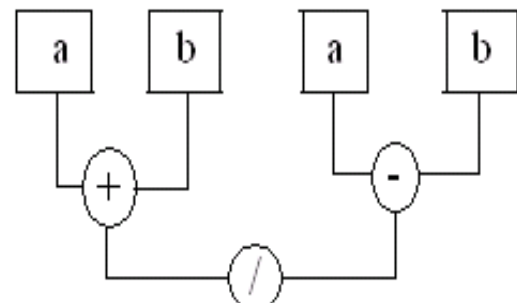
iii)  $c < b \&\& c || d > a$



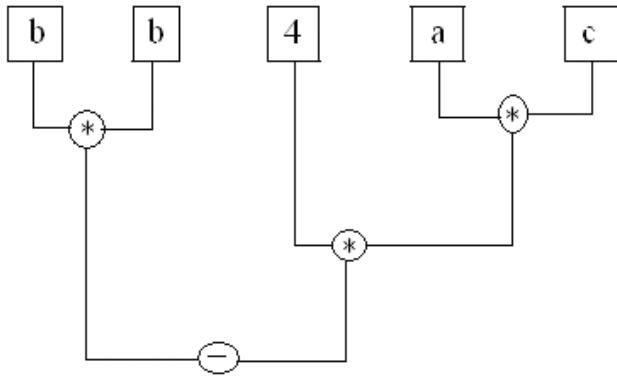
iv)  $(c \leq 50) || (! \text{flag}) \&\& (b+5 == 70)$



v)  $(a+b) / (a-b)$



vi)  $(b*b) - 4*a*c$



2. Identify the errors: [Pg-51]

```
i) # include <iostream.h>
void main()
{
float f=10.0;
x=50;
cout<<x<<f;
}
```

**Error:**

Line 5: Undefined symbol x.

Correction : int x;

```
ii) # include <iostream.h>
void main()
{
int x,y,k,l;
x=y+k--;
cout << x;
}
```

**Error:**

Line 5: Wrong Expression syntax.

3. Predict the output: [Pg-52]

```
i) # include <iostream.h>
#include<conio.h>
void main()
{
int i=20;
cout << i << i++ << ++i;
getch();
}
```

**Output:**

222121

```
ii) # include <iostream.h>
#include <conio.h>
void main()
{
clrscr();
int i=1,a=3
i=a++;
cout << i;
getch();
}
```

**Output:**

3

```
iii) # include <iostream.h>
#include <conio.h>
void main()
{
clrscr();
int i=3,x;
x=i ? i++ : ++i;
cout << x;
getch();}
```

**Output:**

3

```
iv) # include <iostream.h>
#include <conio.h>
void main()
{
clrscr();
int z,x=3,y=2;
z = --x + y++;
cout << z;
getch();
}
```

**Output:**

4

```
v) # include <iostream.h>
#include <conio.h>
void main()
{
clrscr();
char ch = 'a';
ch = (ch=='b') ? ch : 'b';
cout << ch;
getch();
}
```

**Output:**

b

4. Evaluate the following expressions: [Pg-52]

[Given: a=5, b=3, d=1.5, c is integer, f is float]

]

- i)  $f = a + b/a$ ; Ans: 5
- ii)  $c = d * a + b$ ; Ans: 10.5
- iii)  $x = a++ * a + b$ ; Ans: 12.5
- iv)  $y = a - b++ * --b$ ; Ans: -1
- v)  $(x > y) || (!(z == y) \&\& (z < x))$

Case 1: If  $x=10, y=5, z=11$

Ans: 1

Case 2: If  $x=10, y=10, z=10$

Ans: 1

Case 3: If  $x=9, y=10, z=2$

Ans: 1

5. Write the C++ equivalent expressions using conditional operator: [Pg-53]

- i)  $f = 0.5$  if  $x = 30$  otherwise  $f = 5$

Ans:

$f = (x == 30) ? 0.5 : 5;$

- ii)  $fn = 0.9$  if  $x \geq 60$  otherwise  $0.7$

Ans:

$fn = (x \geq 60) ? 0.9 : 0.7;$

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