CS & IT ENGINEERING

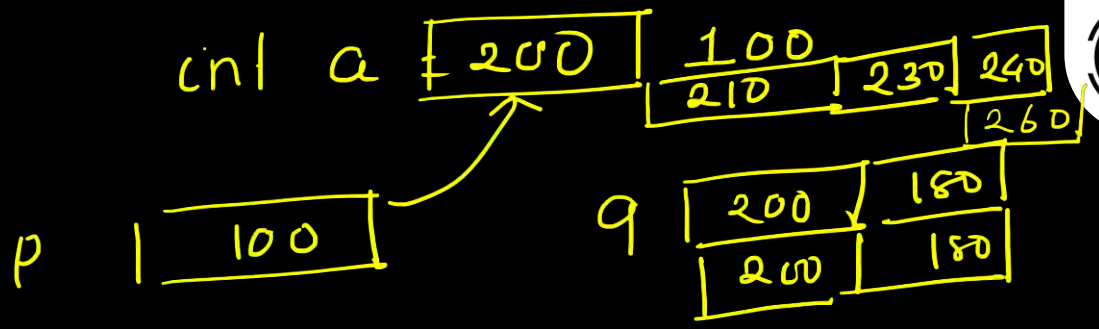
C-Programming

Array and Pointer

DPP-01 Discussion Notes

By- Abhishek Sir

Question



#Q. Consider the following C program?

```
#include <stdio.h>
int a = 200;
void bar(int *p, int q)
{
    *p = *p+10;
    q = q-20;
    a= a+20;
}
int main()
{
    bar(&a,a);
    bar(&a,a);
    printf("%d",a);
return 0;
}
```

[c] Any

The value printed by above program is 260.

A 220

B 240

C 260

D 250

Question

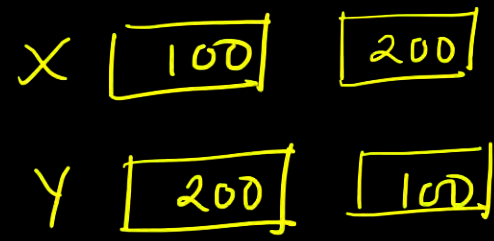
#Q.

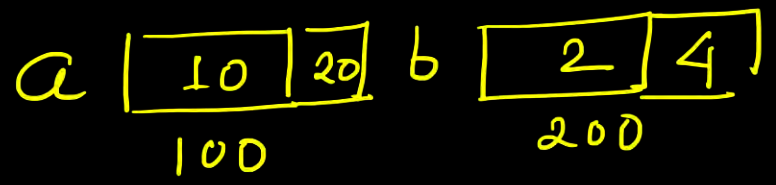
```
#include<stdio.h>
void f(int *x, int *y)
{
    int * temp;
    temp = x;
    x = y;
    y= temp;
    *x=*x+2;
    *y=*y*2;
}
```

Address swap

```
int main()
{
    int a=10, b=2;
    f(&a, &b);
    printf("%d %d\n", a,b);
    return 0;
}
```

The output of the program is





temp = 100

x = 200

y = 100

→ D is the Answer value

A 20, 2

B 20, 1

C 20, 20

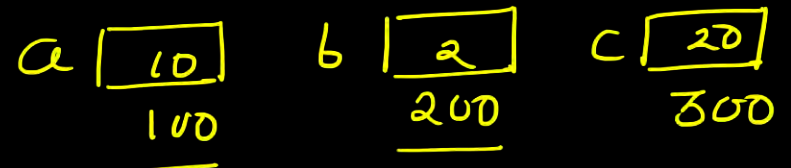
D 20, 4

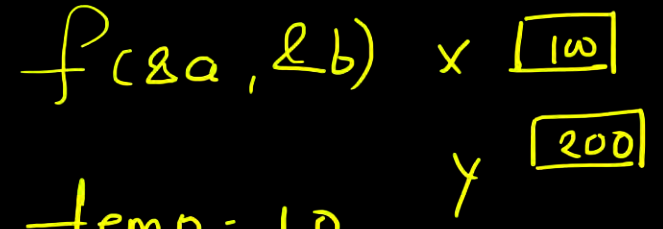
Question

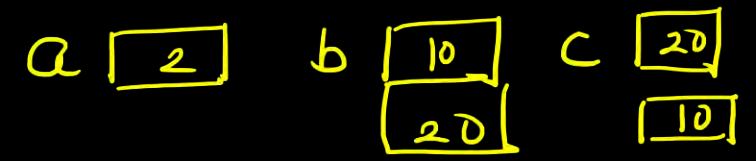
#Q.

```
#include<stdio.h>
void f(int *x, int *y)
{
    int  temp;
    temp = *x;
    *x = *y;
    *y= temp;
}
int main()
{
    int a=10, b=2, c=20,
    f(&a, &b);
    f(&b, &c);
    f(&c, &a);
    printf("%d",a);
    return 0;
}
```

The output is [10].







A 10

B 2

C 20

D 24

Question

#Q. Consider the following program

```
# include <stdio.h>
int main ()
{
    int a, b;
    int v = 3;
    int *pv;
    a = 2* (v+5);
    pv = &v;
    b = 2* (*pv+5);
    printf ("\n a = %d b = %d", a,b);
    return 0;
}
```

Output of the program is

a 16 b

v 3 pv 100

100

a : 2 * (3+5) = 16

b : 2 * (3+5) = 16

a : 16

b : 16

[A] Ans

(A) a = 16 b = 16

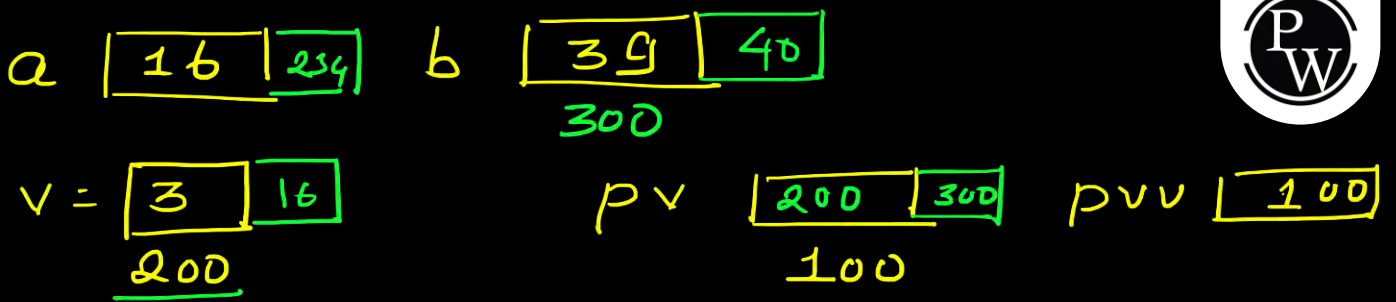
(B) a = 16 b = 32

(C) a = 16 b = 8

(D) a = 16 b = 64

Question

#Q.
```
# include <stdio.h>
int main ()        {
    int a, b;
    int v = 3;
    int *pv,**pvv;
    pvv = &pv;
    a = 2* (v+5);
    b = 3* (v+10);
    pv = &v;
    v = 2* (*pv+5);
    pv = &b;
    a = 2*(b+*pv+**pvv);
    *pv++;
    b = 2*(b+*pv+**pvv);
    printf ("%d", a+b);
    return 0;   } Output of the program is
```



a = 2 * (3+5) = 16

b = 3 * (3+10) = 39

v = 2 * (3+5) = 16

a = 2 * (39 + 39 + 39) = 234

b = 2 * (40 + 40 + 40) = 240

474

474 Ans

Question

#Q. The value printed by the following program is _____.

```
#include<stdio.h>
void foo1(int* ptr, int num)
{
    num = num + 5;
    *ptr = *ptr * num;
    return;
}
void foo2(int* ptr, int num)
{
    num = num - 10;
    *ptr = *ptr / num;
    return;
}
```

```
void main()
{
    int i=5, j=10,k=20;
    foo2(&j, k);
    foo1(&i, j);
    printf("%d", i+j);
}
```

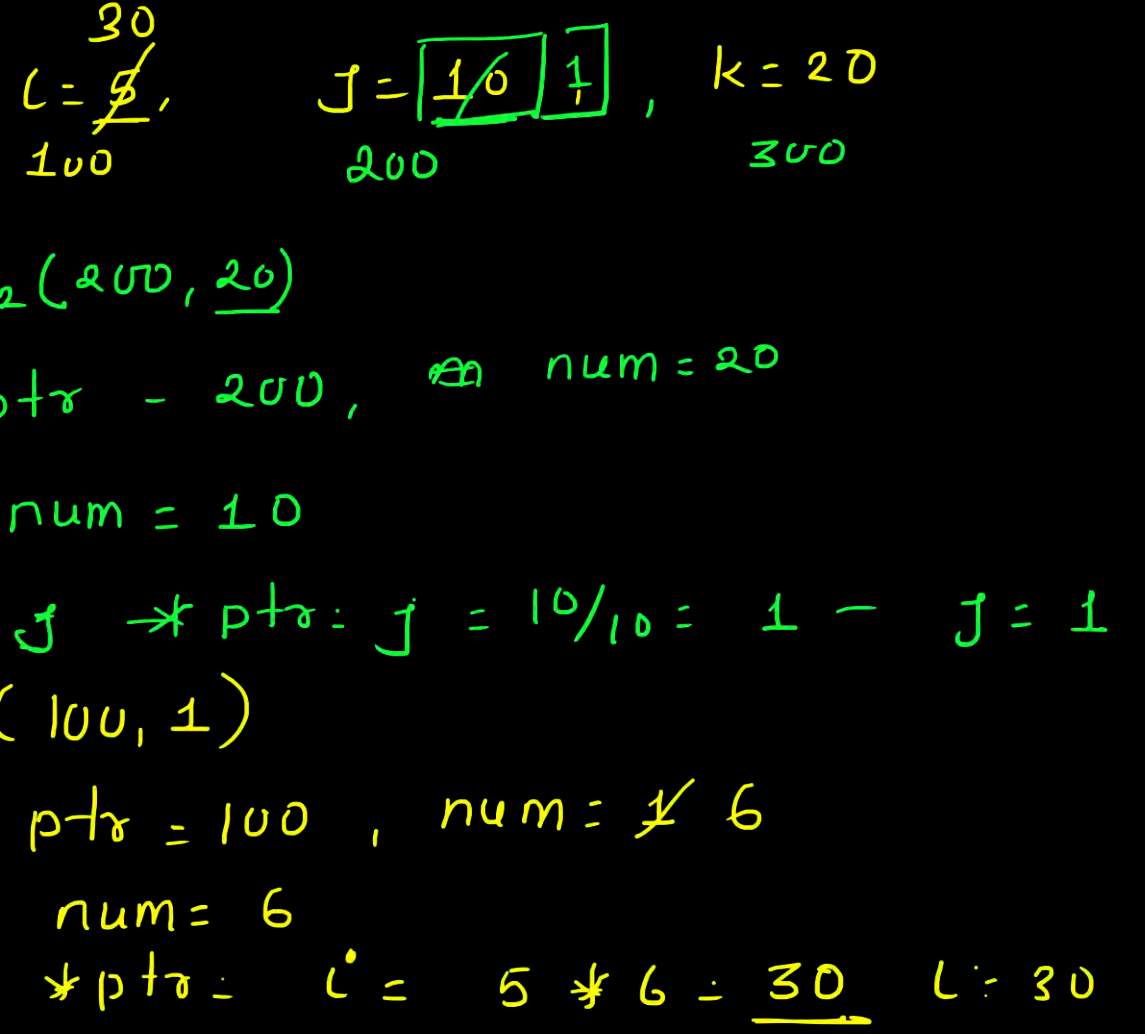
30 + 1 = 31

Answer

Question

#Q. The value printed by the following program is _____.

```
#include<stdio.h>
void foo1(int* ptr, int num)
{
    num = num + 5;
    *ptr = *ptr * num;
    return;
}
void foo2(int* ptr, int num)
{
    num = num - 10;
    *ptr = *ptr / num;
    return;
}
```



Question

#Q.
```
#include<stdio.h>
void f1(int *x, int *y) {
    x = y ;
    *x=*x+2;
    *y=*y*2;
}
void f2(int *x, int *y) {
    y = x ;
    *x=*x-3;
    *y=*y*12;
}
void f3(int *x, int *y) {
    *x=*x+13;
    *y=*y*10;
}
int main() {
    int a=10, b=2;
    f1(&a, &b);
    f2(&a, &b);
    f3(&a, &b);
    printf("%d", a+b);
    return 0;
}
```

Output of the program is

a 10 7 (84, 97) — 100
b 2 4 8 (84) — 200

f_1 (100, 200)

x = 100 y = 200

x = 200

*x = 2+2 = 4 = b

*y = 4 * 2 = 8

f_2 (100, 200)

x = 100 y = 200

y = 100

*x = 10 − 3 = 7

*y = 7 * 12 = 84

f_3 (100, 200)

x = 100, y = 200

*x = 97 *y = 80

a + b = 97 + 80 = 177

Ans = 177

Question

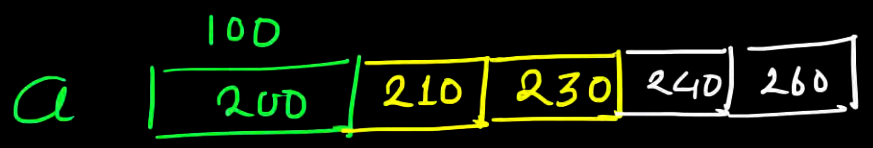
#Q.
```
#include<stdio.h>
void f(int *x, int *y)
{
    x = y;
    *x = *x + 2
    *y = *y + 2
}
int main()
{
    int a=10, b=2
    f(&a, &b);
    printf("% d %d\n", a+b);
    return 0;
}
```
The value printed by the program is _____

Question

#Q.

```
#include <stdio.h>
int a = 200;
int bar(int *p, int q)
{
    static  int x;
    *p = *p+10;
    q = q-20;
    a= a+20;
    x += a;
    return x;
}
int main()
{
    printf("%d",bar(&a,a)+bar(&a,a));
    return 0;
}
```

The output of the program is 720



bar (100 , 200)

Add

p = 100 , q = ~~200~~ 180

*p: 210

q: 200 -20 : 180

a: 210+20 = 230

x: 0 +230 : 230

bar (100 , 230)

*p = 230+10 = 240

q = 230-20 = 210

a = 240+20 = 260

x = 230+ 260 = 490

230 + 490 =

Answer is 720

THANK - YOU