GATE

Computer Science & Information Technology

C - Programming

Array & Pointer

DPP: 1

Q1 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;
}
```

The value printed by above program is_____

(A) 220 (B) 240

(C) 260 (D) 250

Q2 Conside the following program.

```
#include<stdio.h>
void f(int *x, int *y) {
      int * temp;
      temp = x;
       x = y;
       y= temp;
       *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 output of the program is_____

(A) 20,2 (B) 20,1

(C) 20,20 (D) 20,4

Q3 Consider the folloing program

```
#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 _____

(A) 10 (B) 2

(C) 20 (D) 24

Q4 Consider the following program

```
#include<stdio.h>
# 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) a = 16 b = 16 (B) a = 16 b = 32

(C) a = 16 b = 8 (D) a = 16 b = 64

Q5 Consider the following program

```
# 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_____

Q6 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);
}
```

Q7

```
#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;
}
```

The value printed by the above program is _____?

Q8

```
#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 _____

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Answer Key

Q1	(C)	Q5	474
Q2	(D)	Q6	31
Q3	(A)	Q7	177
Q4	(A)	Q8	720

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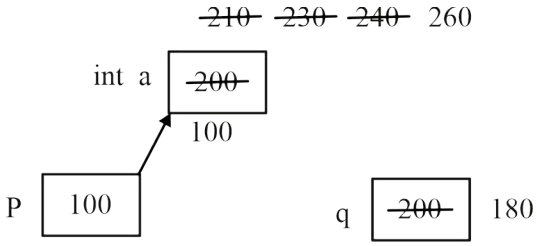
Hints & Solutions

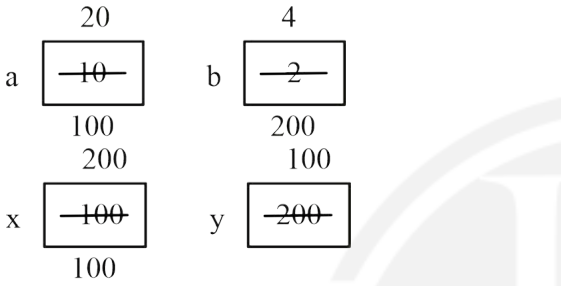
Q1 Text Solution:



∴ 260 is corrcet answer

Hence, option 'c' is correct

Q2 Text Solution:



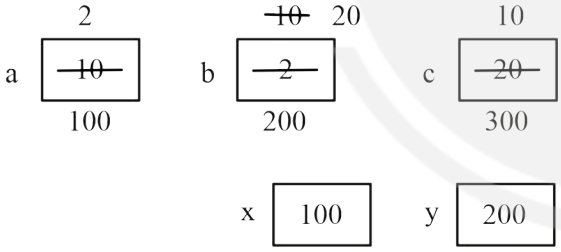
temp = 100

x = 200

y = 100

∴ D is correct answer.

Q3 Text Solution:

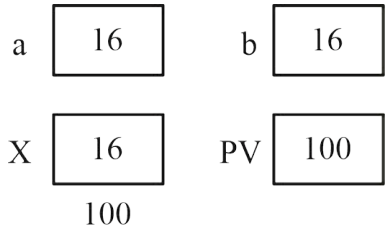


temp = 10

*x = y

on priting a we get 10 which is option 'a'.

Q4 Text Solution:



a = 2 * (3 +5) = 16

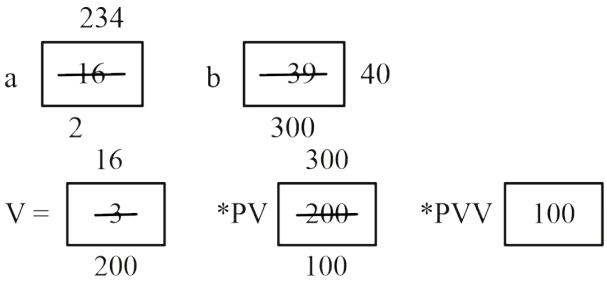
b = 2* (3 + 5) = 16

a = 16

b = 16

∴ Option a is correct answer.

Q5 Text Solution:



a = 2 * (3 + 5) = 16

b = 3* (3 + 10) = 39

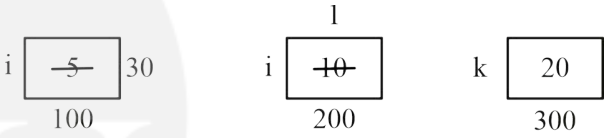
v = 2* (3 + 5) = 16

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

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

∴ 474 is correct answer.

Q6 Text Solution:



foo2 (200, 20)

ptr 200 num = 20

num = 10

j = 10/10 =1

foo1 (100, 1)

ptr 100 , num = 1 6

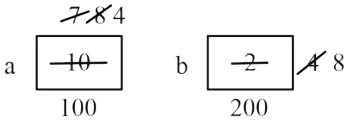
num = 6

i = 5 * 6 = 30

30 + 1 = 31

∴ 31 is the answer

Q7 Text Solution:



f1(100, 200)

x = 200 y = 200

x = 200

*x = 2 + 2 = 4 = b

*y = 4 * 2 = 8

f2 (100, 200)

x = 100 y = 200

y = 100

*x = 10 – 3 = 7

*y = 7 * 12 = 84

f3 (100, 200)

x = 10, y 200

*x = 97 *y =80

a + b = 97 + 80 = 177

∴ 177 is the answer

Q8 Text Solution:

a ~~200~~ ~~210~~ ~~230~~ ~~240~~ 260

100

bar (100, 200)

p 100 q ~~200~~ 180

*p= 210

q = 200 – 20 = 180

q = 210 + 20 = 230

x = 0 + 230 = 230

again calling bar function

bar (100, 230)

*p = 230 + 10 = 240

q = 230 – 20 = 210

q = 240 + 20 = 260

x = 260 + 230 = 490

∴ 720 is correct answer.