

```
61. extern int g;

void abc( )
{
    ++g;
}

void main()
{
    ++g;
    abc();
    printf("g=%d", g);
}
```

What is the output of the above program?

(a) 2

(b) 1

(c) 0

(d) linking error

(d) ~~6~~ → ~~extern int g;~~
 void abc() {
 } ++g; }
 void main() {
 } ++g;
 abc();
 printf("%d", g);

When we are working with global variable, if the declaration statement not available, then we will ~~not~~ get compile-time - Error.

if the definition is not available we get linking - Error.

(d) ←

62. Write the C-statement for the following declaration
“Function ‘f’ returns a pointer to an array of pointers to a function return a character”
- (a) char (*(*f())[])();
 - (b) char (*(*f()))();
 - (c) char * (*(*f()))();
 - (d) char * (*(*f())[])();

① G2 \Rightarrow "Function f" returns a pointer to an array
of pointers to a function return a character

① char (*(*f())[T])();

63. Consider the following function:

```
void test_b(int n)
{
    if (n>0)
        test_b(n - 2);
    printf ("%d", n );
}
```

What is printed by the call `test_b(4)` ?

- (a) 0 2 4
- (b) 0 2
- (c) 2 4
- (d) 4 2 0

Q) 63

void test_b(int n)

{ if $n \geq 0$

 test_b(n-2);

 printf("%d", n);

}

test_b(9) \rightarrow ?

a. 0 2 9

b(4) \rightarrow b(2) = 2

b(2) \rightarrow b(0) = 2

b(0) \rightarrow False

0

Teacher's Signature

Common Data for Q64 and Q65 is given below.

Consider the following program:

```
double Do( double X, long int n)
```

```
{
```

```
    double A;
```

```
    if ( n == 1)
```

```
        return X;
```

```
    A = Do( X, n/2);
```

```
    if (n % 2)
```

```
        return X * A * A;
```

```
    return A*A;
```

```
}
```

64. What does DO do?

- (a) X^n
- (b) n^X
- (c) X^{n+1}
- (d) n^{X+1}

Common ifns

69 8 65 \Rightarrow

and return double D0.(double X, long int n)

double A;

if (n == 1)

return X;

A = D0(X, n/2);

if (n % 2)

return X * A * A;

return A * A;

}

Let n=2

A=D0(X, 1)

return X * A;

return X;

A = X

return (X * A)

= X * X

= X²

a) 69 8. and D0() \rightarrow { } maintaining 65

(a) X^n (P)(C) for $n=2$
 X^2

65. How many number of multiplications are taking place if $X = 2$ and $n = 37$?

- (a) 37
- (b) 36
- (c) 7
- (d) 6

Q) ~~No.~~ of multiplication
~~x = 2, n = 37~~

$$A = D_0(X, n/2) = D_0(2, 18)$$

$$A = D_0(X, 9)$$

$$A = D_0(2, 4)$$

$$A = D_0(2, 2)$$

$$A = D_0(2, 1)$$

return

$$2 * A * A$$

$$A * A$$

$$2 * A * A$$

$$2 * A * A$$

$$A * A$$

(1) $A = 2 \Rightarrow A = D_0(2, 1) \rightarrow \text{return } 2 * 2 = 2^2$

(2) $A = D_0(2, 2) \rightarrow \text{return } 2^2 * 2^2 = 2^4$

(3) ④

$\underline{(2, 4)}$ $2^2 * 2^2 = 2^4$

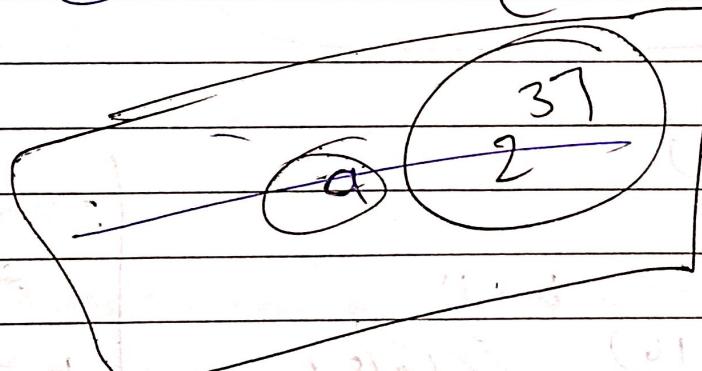
(4) ⑤

$\underline{(2, 8)}$ $2^4 * 2^4 = 2^8$

(5) ⑥

$\underline{(2, 16)}$ $2^8 * 2^8 = 2^{16}$

(6) ⑦ $\underline{(2, 32)}$ $2^{16} * 2^{16} = 2^{32}$



(c) Total No. of multiplication = 7

66. What is the output of the following program?

```
#include<stdio.h>
int main(void)
{
    int i=10;
    if(i==50)
        printf("i is fifty\n");
    else
        printf("i is not fifty\n");
    return 0;
}
```

- (a) i is fifty
- (b) i is not fifty
- (c) Compile time error
- (d) No output

(b) ~~66 => #include <stdio.h>~~

```
int main(void)
{
    int i = 10;
    i == 50; // 10 == 50 // False
    if (i == 50)
        printf("i is 50");
    else
        printf("i is not 50");
    return 0;
}
```

(b) i is not fifty

67. What is the output of the following program?

```
int main(void)
{
    int a=20,b=3;
    if(a<10)
        a=a-5;
    b=b+5;
    printf("%d %d\n",a,b);
    return 0;
}
```

(a) 20 8

(b) 21 9

(c) 20 9

(d) 21 10

①

678

int main()

{

int a=20; b=3;

if (a < 10) // False

a = a - 5;

b = b + 5

printf("%d %d", a, b);

return 0;

}

20 < 10 // False

~~a = a - 5 = 15~~

b = b + 5

b = 3 + 5

b = 8

a = 20

a

20, 8

Teacher's Signature

68. What is the output of the following program?

```
#include<stdio.h>

int main(void)
{
    int i=1, j=9;
    if(i>=5 && j<5);
        i = j+2;
    printf("%d\n", i);
    return 0;
}
```

(a) 12

(c) 11

(b) 10

(d) 15

(e) 68) ~~#include <stdio.h>~~ ~~int i = 5, j = 9; if (i >= 5 && j < 5) { i = j + 2; printf("%d", i); }~~

int main()
{
 int i = 13, j = 9; // ~~i = 5, j = 9~~ ~~i >= 5~~ ~~j < 5~~ ~~if (i >= 5 && j < 5)~~ ~~i = j + 2;~~ ~~printf("%d", i);~~ ~~return 0;~~
 i = 9 + 2 = 11
 c. 11 as
 ~~if (i >= 5 && j < 5) { i = j + 2; printf("%d", i); }~~

But this is always executed because if(); condition terminated.

69. What is the output of the following program?

```
#include<stdio.h>
```

```
int main(void)
```

```
{
```

```
    int a=0,b=0;
```

```
    if(!a)
```

```
{
```

```
        b = !a;
```

```
        if(b)
```

```
            a = !b;
```

```
}
```

```
    printf("%d, %d\n", a, b);
```

```
    return 0;
```

```
}
```

(a) 1, 0

(c) 1, 1

(b) 0, 1

(d) 0, 0

b) 69 \Rightarrow #include <stdio.h>
 int main ()
 { int a = 0, b = 0;
 if (!a)
 { b = 1;
 if (!b)
 a = !b; b = !L = 0
 }
 a = !b;
 printf ("%d, %d", a, b);
 return 0;

if ($\neg a$) \rightarrow if (True)
 if ($\neg b$) \rightarrow if (False)
 $a = \neg b = \neg L = 0$

print (a, b)

a b

b 0, 1

Teacher's Signature

70. What is the output of the following program?

```
#include<stdio.h>
```

```
int main(void)
```

```
{
```

```
    int a=2,x=10;
```

```
    if(a==2)
```

```
        if(x==8)
```

```
            printf("a is 2 and x is 8\n");
```

```
        else
```

```
            printf("a is not 2\n");
```

```
    return 0;
```

```
}
```

(a) a is 2 and x is 8

(b) a is not 2

(c) 18

(d) None of these

(b) 70

```
#include <stdio.h>
int main()
{
    int a = 2, x = 10;
    if (a == 2) // True
        if (x == 8) // False
            printf("a is 2 & x is 8");
        else
            printf("a is not 2");
    return 0;
}
```

print ("a is not 2")

(b) a is not 2