CS & IT ENGINEERING

Data Structure & Programming

1500 Series

Lecture No.- 05

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Recap of Previous Lecture

Topic Problem Practice Part-04

Topics to be Covered

Topic Problem Practice Part-05

[MCQ]

#Q. a = 5 , b = 6, c = 2 ;

$\boxed{\texttt{a >> c \& b == 5 ^ c}}$ || 2 → ∼∼∼ || 2

What does the expression results ?

- [✓ A] 1
- B 0
- C 5
- D 6

binary ↑

Arith ① × / %

② + , -

bitwise LS, RS ③ << , >>

Rel ④ <, >, <=, >=

⑤ == , !=

⑥ &

⑦ ^

⑧ |

⑨ &&

⑩ ||

⑪ ?:

⑫ =, +=, -=, ×=, /=, %=, &= . . . .

⑬ ,

[MCQ]

<< > <= > == > &

#Q. For the following operators

(i) <<

(ii) = =

(iii) < =

(iv) & (Bitwise AND)

(v) (type)

Which one is the precedence order in C

Ex- * > + (Both binary Operators)

A (i) > (ii) > (iii) > (iv)> (v)

B (i) > (ii) > (iii) > (v)> (iv)

C (i) > (ii) > (iv) > (iii)> (v)

D (v) > (i) > (iii) > (ii)> (iv)

[NAT]

Struct ⇒ struct

#Q.
```
Struct Temp {
        char *strings [10];
        int data;
};
Struct Temp temp [4];
main ( ) {
        temp [1]. strings [3] =“hello world”;
        printf(“%ld”, &(temp[3]. strings[3]));
        print (“%ld”, & (temp[3]. strings[4]));
}
```

10×8

4

84 byte

sizeof (struct Temp)

⇒ 84 byte

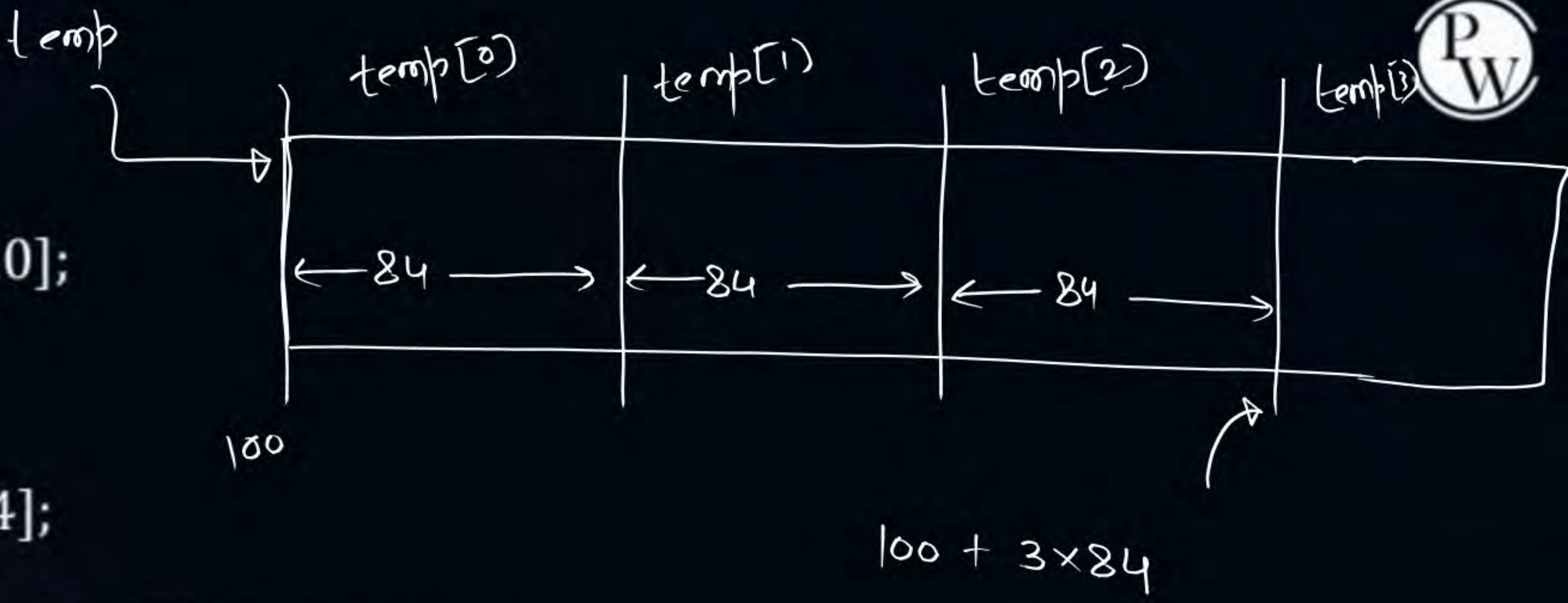
If base address of temp is 100, then output of program is________. (64 bit architecture)

[NAT]

#Q.

```
Struct Temp {
        char *strings [10];
        int data;
};
Struct Temp temp [4];
main () {
        temp [1]. strings [3] =“hello world”;
        printf(“%ld”, &(temp[3]. strings[3]));
        print (“%ld”, & (temp[3]. strings[4]));
}
```

If base address of temp is 100, then output of program is________. (64 bit architecture)

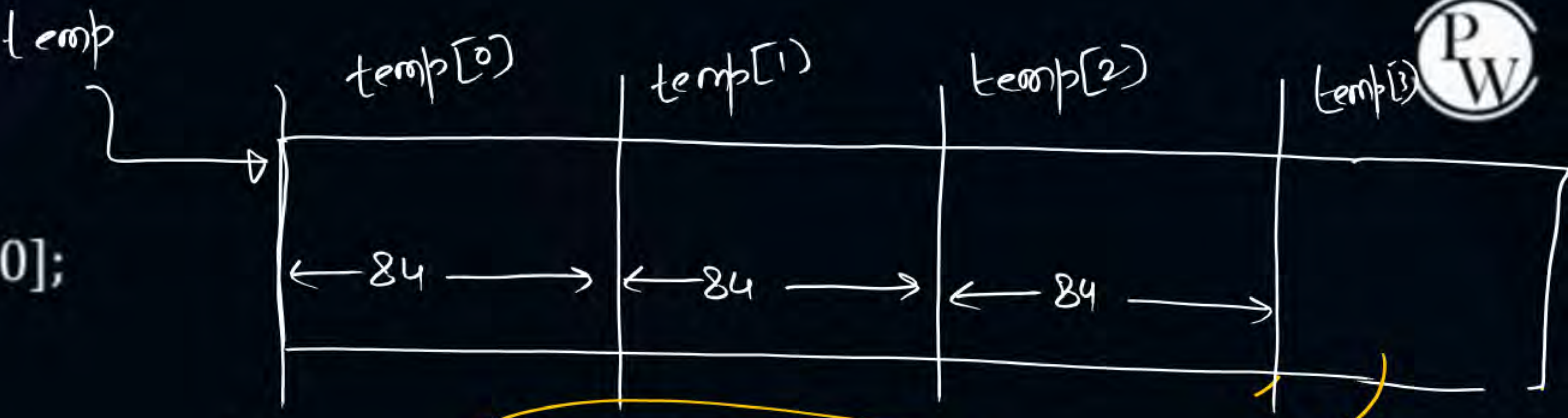


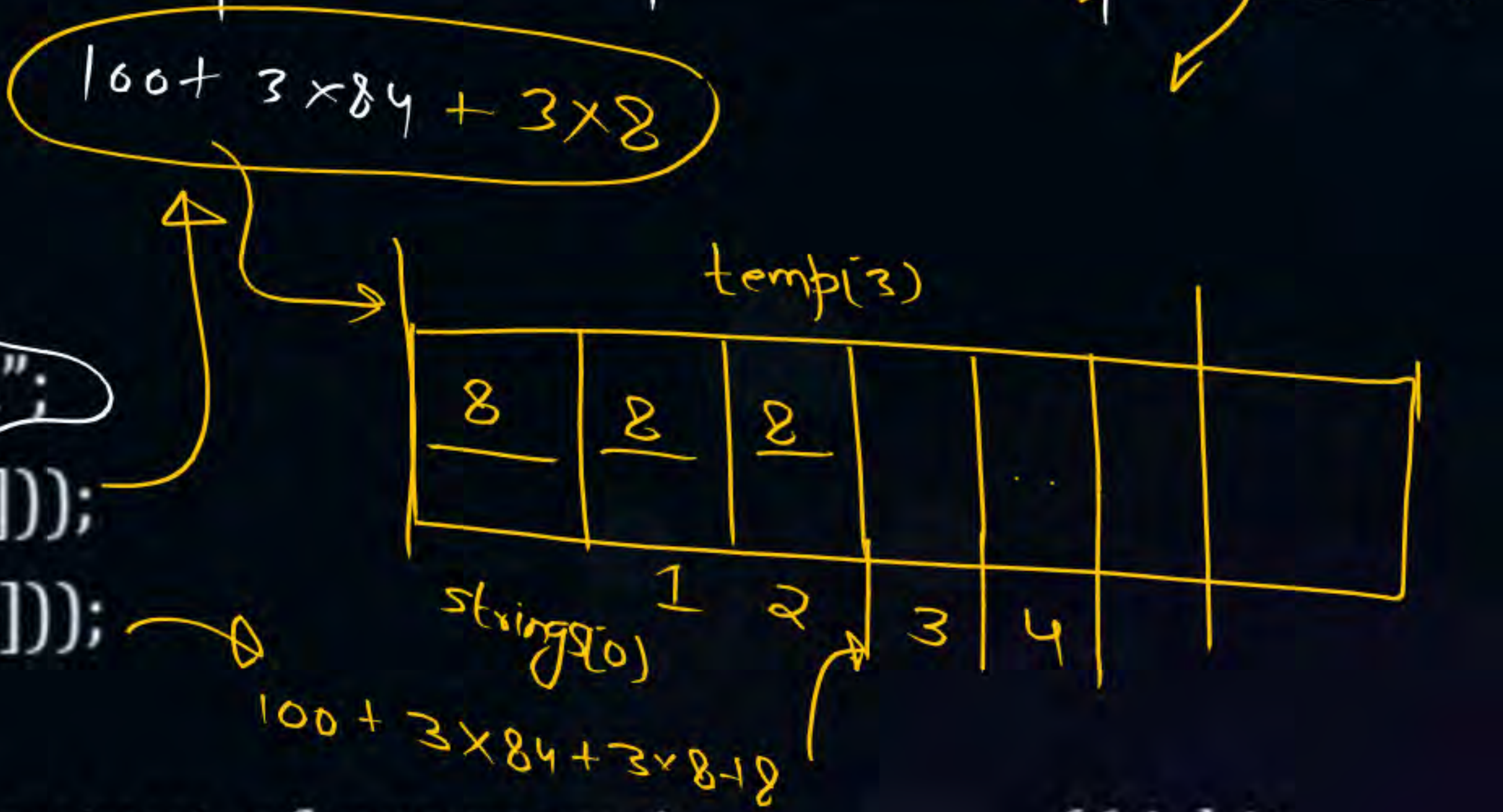
[NAT]

```
#Q. Struct Temp {
        char *strings [10];
        int data;
    };
    Struct Temp temp [4];
    main ( ) {
  X     temp [1]. strings [3] ="hello world";
        printf("%ld", &(temp[3]. strings[3]));
        print ("%ld", & (temp[3]. strings[4]));
    }
```

pointer

If base address of temp is 100, then output of program is________. (64 bit architecture)





[MCQ]

#Q. Consider an array A[3][5], the address of A[0] [0] is $\underset{\sim}{200}$ & A[0][1] is 212 then what is the address of A[2][4]

A 380

B ✓ 368

C 370

D 382

RMO

$A_{00} \rightarrow A_{01}$

element size = 212 − 200 = 12 byte

add (A_{24})

$200 + (2 \times 5 + 4) \times 12$ byle

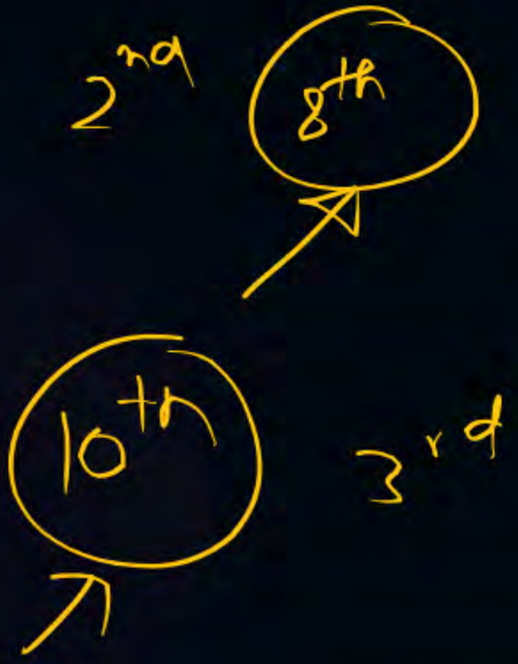
$200 + 14 \times 12$

$200 + 168$

$\Rightarrow \boxed{368}$

[MCQ]

#Q. Consider a single linked list of n elements, then the min order of time to interchange mth and l^{th} elements.



[✓ A] max (m, l)

B max (n, m, l)

C min (m. l)

D l + min (m, l)

[NAT]

#Q. Common data for next 2 questions

```
#include <stdio.h>
int main ( ) {
    void print (int x) {
        printf ("%d" x);
        void print square (int x){
            printf ("%d", x*x);
        }
        print square (x);
    }
    void scan (int * a) {
        scanf("%d", a);
    }
```

```
            int x;
            scan(&x);
            print(x);
            return 0;
}
```

5

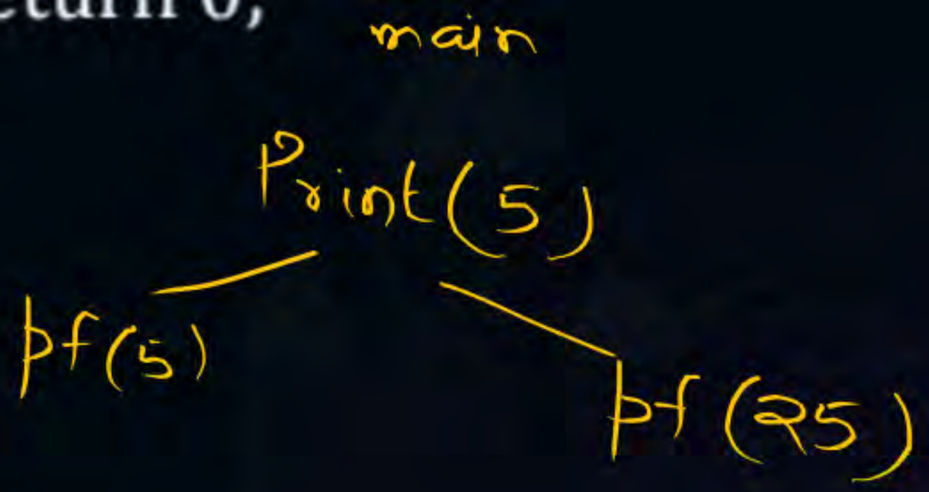
525

[✓ a) 525]

b) 25

c) G

d) Error



[NAT]

#Q. Common data for next 2 questions

```
#include <stdio.h>
int main ( ) {
    void print (int x) {
        printf ("%d" x);
        void print square (int x){
            printf ("%d", x*x);
        }
        print square (x);
    }
    void scan (int * a) {
        scanf("%d", a);
    }
        int x;
        scan(&x);
        print(x);
        return 0;
}
```

Standard ✓

?

~~Yes~~ NO

we can define a func. in another func.

a)

b)

c)

d)

[MSQ]

#Q. Output of the program if input is 5.

A 5 2 5

B 2 5

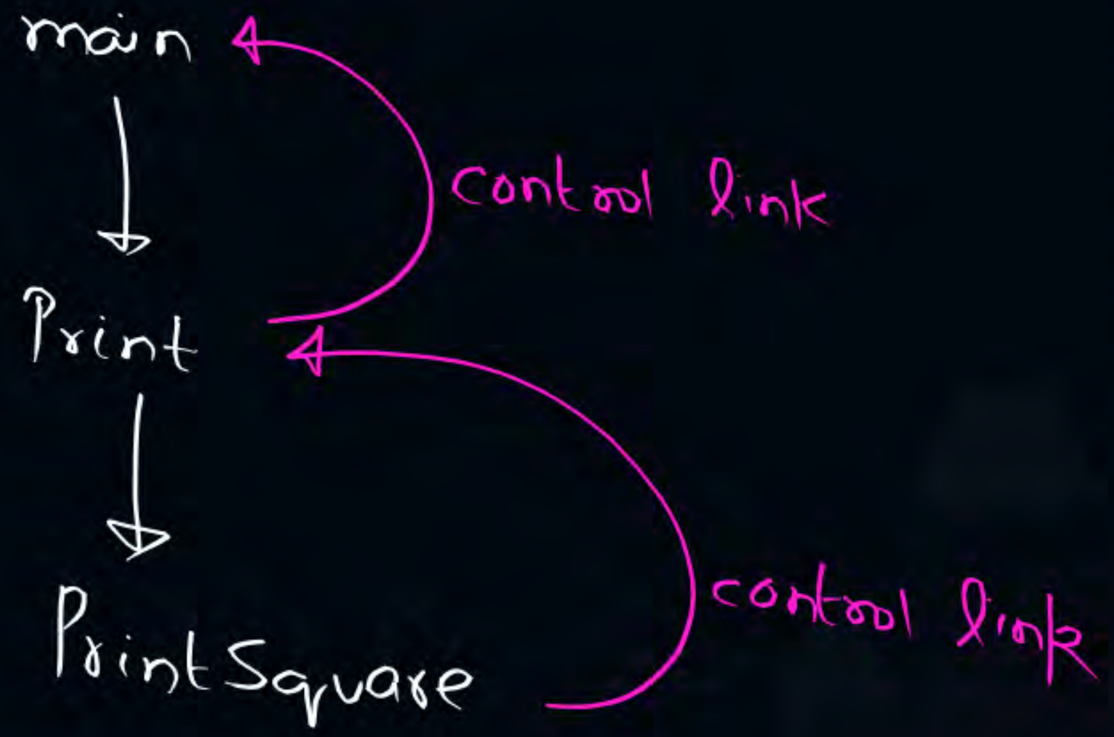
C Garbage value

D Error at Linking

[MCQ]

#Q. If the calling chain is main → print → printSquare then the access link and control link of print square is to which function.

Parent function



A Main , Print

B Print , Print

C Main, Main

D Null, Main

```
int x = 20;

f() {

    int x ;

    x++ ;

    pf ——  {
                int y=20;
                pf("%d",x);

            }

}
```

non-local data

static scoping

dynamic scoping

[MCQ]

#Q.
```
int main ( ) {
    void P1( ) {
        printf ("Hello");
        P2 ( ) ;
    }
    void P2 ( ) {
        void P3 ( ) {
            P1( );
        }
        P3 ( );
    }
    void P4( ) {
        P1 ( ) ;
    }
    P4 ( );

        }
```

For the given program the call link is main→ P4 → P1→ P2 → P3 → P1

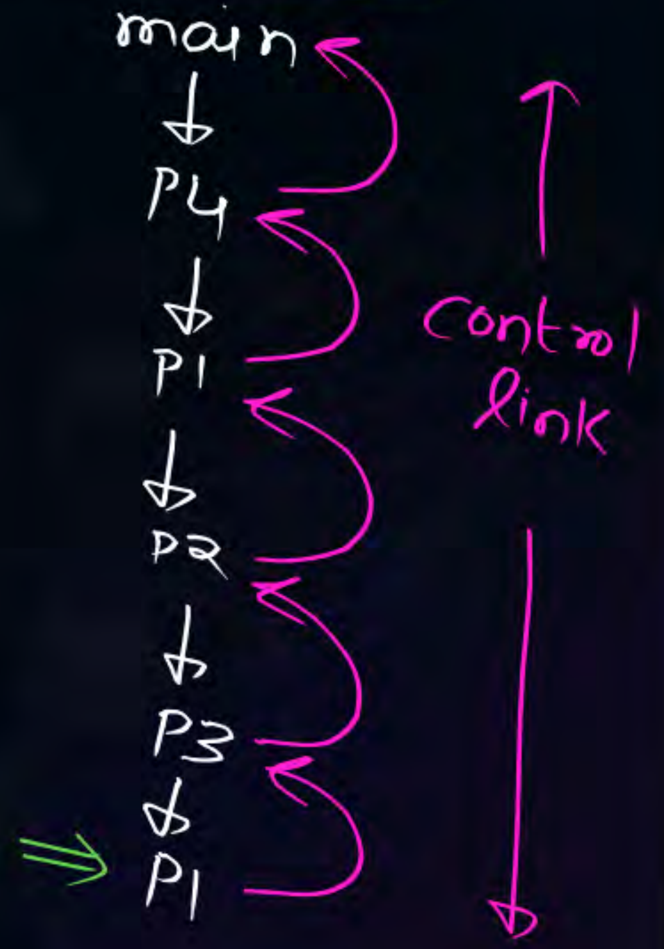
What is the access link & control link of the P1 function which is at the top of control stack.

A P3 , P4

B main , P4

C P3 , P3

[✓ D] main , P3



[MCQ]

#Q.

```
Struct Temp {
        char * strings [10];
        int data;
};
struct Temp temp [4];
main ( ) {
        temp[3].strings[3] = “hello world”;
        printf (“%d”, & (temp [3]. strings[3][0]));
}
```

HW

The output of program if base address of temp is 100 in a 64 bit architecture computer.

A 292

B 300

C 284

D None of these

[MCQ]

defi

```
#Q. #include <stdio.h>
    int main ( ) {
        void print (int x){
            printf("%d,",x)    → 5
            {
             #define printSquare (x) printf("%d", x*x);
            }
        }
        int x = 5 ;
        print (x);
        printSquare (x);
    }
```

Assume

Yes → compilation से पहले होता है

NO

- A 525 ✓
- B Error at load time
- C Error at linking
- D Compilation error

[MCQ]

Telegram
↳ 4to5

#Q.
```
#include <stdio.h>
#define temp(x) printf(“%d”,x);  ×
#define temp(x) printf(“%d", x*x );/*line 1*/
int main ( ) {
      temp(5) /*line 2*/   ✓
}
```

→ pf("%d",5*5);

A This program runs perfectly output 5

B ✓ Program runs perfectly output 25

C Error of double declaration at line 1

D Missing semicolon at line 2.

2 mins Summary

Topic One -

Topic Two -

Topic Three

Topic Four

Topic Five

THANK - YOU