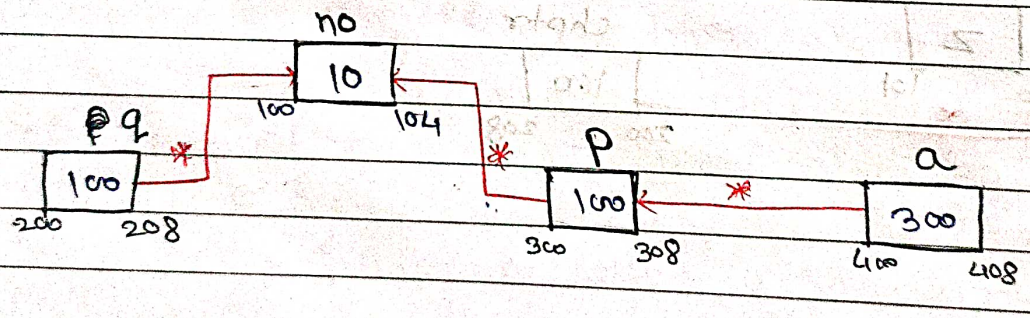
Assignment No:-6

Q. write the statement reading which descaibes below syntax and draw its diagrammatic layout.

→

1) int no = 10;
int *p = &no
int *q = &no
int **a = &p

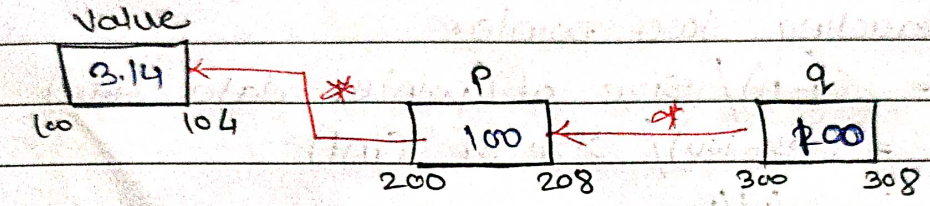
→ no is a variable of type integer initialized with 10.
p is a pointer which points to integer & currently it holds address of no.
q is a pointer which points to integer & currently it holds address of no.
a is a pointer which points to integer & currently it holds address of pointer p.

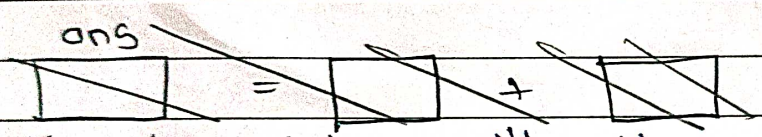


2) float value = 3.14;
float *p = & value;
float *q = & p;
float ans = *p + *q;

→ value is a variable of type float initialized with 3.14
p is a pointer which points to float & currently it holds address of value.

q is a pointer which points to float data type and currently hold the value of pointer p.
ans is a variable of type float initialized with addition of pointer and pointer q.



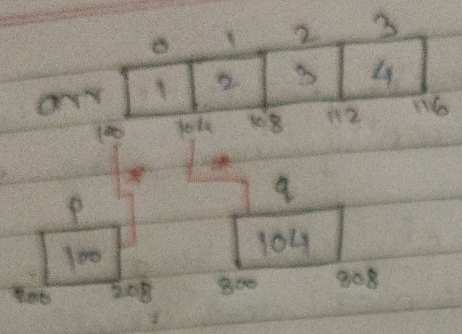


According to pointer arithmatic addition of two pointer are not allow.

3] int arr [] = {1, 2, 3, 4};
int *p = arr;
int *q = arr+1;
int * ans = *q - *p;

→

arr is a one-dimensional array which content four elements in it. Each element is of integer data type and elements are initialized with 1, 2, 3, 4.
~~p is a pointer~~
p and q are the pointer variable of array arr. p is a 0th element of array.
q is a increament of arr.



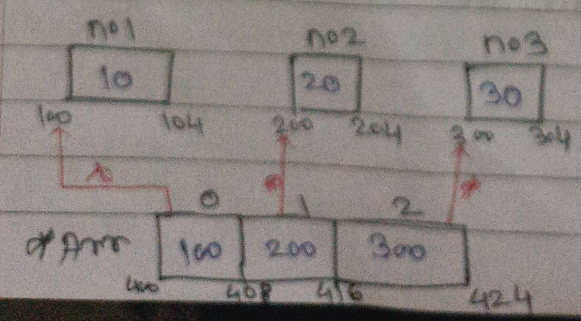
p+1 = p++
= p+1 * sizeof(arraydata)
= p+1 * sizeof(int)
= p+1 * 4
= 100 + 4
= 104

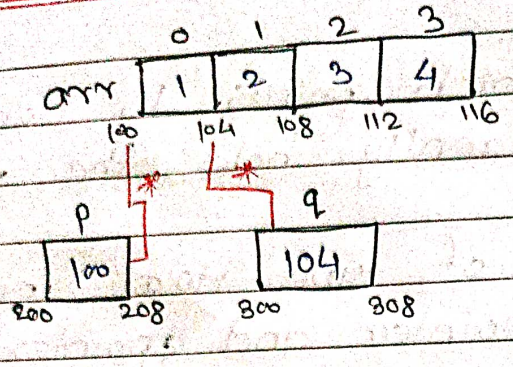
Substracting two pointer
q-p = (q-p)/ size of (pointer data type)
= (104-100)/ size of (int)
= 4/4
= 1

4) int no1 = 10;
int no2 = 20;
int no3 = 30;
int * Arr[] = {&no1, &no2, &no3};

→

no1 is a variable of type integer initialized with value 10.
no2 is a variable of type integer initialized with value 20.
no3 is a variable of type integer initialized with value 30.
Arr is a array pointer which points to integer data type and currently holds the addresses of no1, no2, no3.





$P+1 = P++$

$= P+1 * \text{sizeof(arraydata)}$

$= P+1 * \text{sizeof(int)}$

$= P+1 * 4$

$= 100 + 4$

$= 104$

Substracting two pointer

$q-p = (q-p) / \text{size of (pointer data type)}$

$= (104-100) / \text{size of (int)}$

$= 4/4$

$= 1$

4) `int no1 = 10;`
`int no2 = 20;`
`int no3 = 30;`
`int * Arr[] = {&no1, &no2, &no3};`

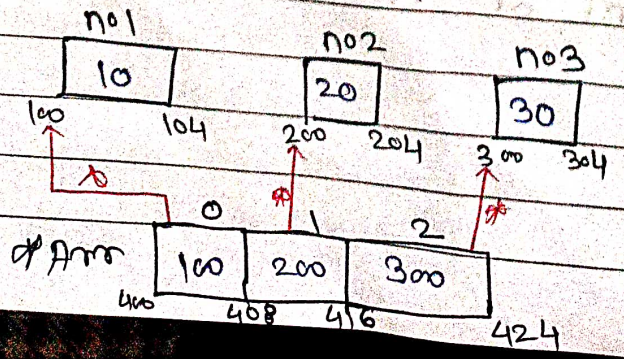
→

no1 is a variable of type integer initialized with value 10.

no2 is a variable of type integer initialized with value 20.

no3 is a variable of type integer initialized with value 30.

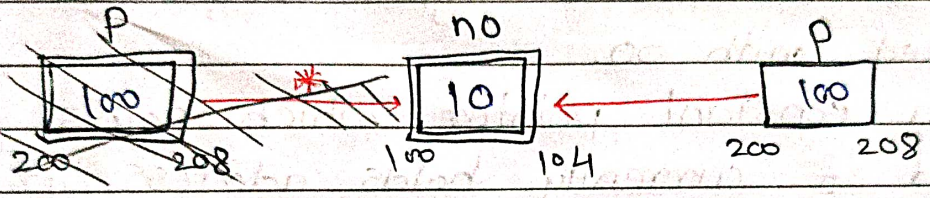
Arr is a array pointer which points to integer data type and currently holds the addresses of no1, no2, no3.



5] const int no = 10;
const int *p = &no;

→

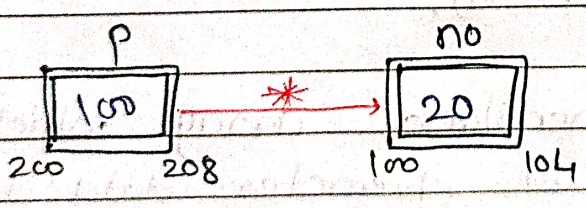
no is a variable of type integer constant initialized with value 10.
p is a pointer which points to integer constant & currently it holds address of no.



6] const int no = 20;
int* const p = &no;

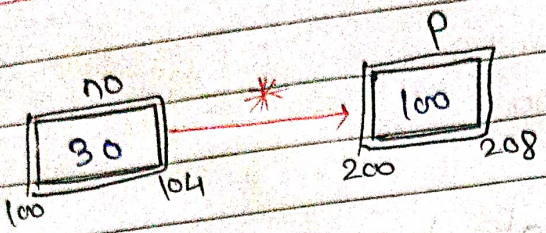
→

no is a variable of type integer constant initialized with value 20.
p is a constant pointer which points to integer & currently it holds address of no.



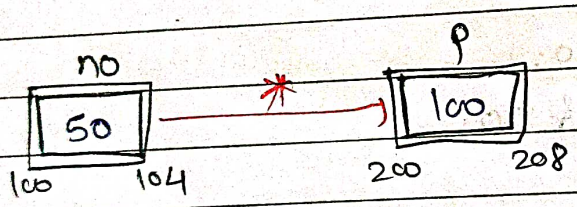
7] const int no = 30;
const int * const p = &no;

→ no is a variable of integer constant initialized with value 30.
p is a constant pointer which points to integer constant & currently holds address of no.



8) const int no = 50;
int const * const p = &no;

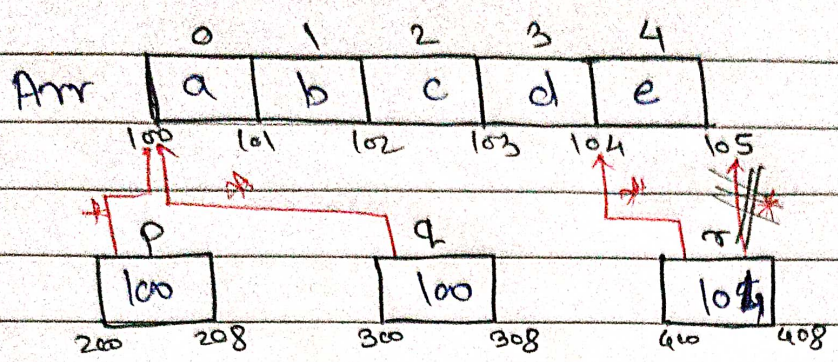
→ no is a variable of type integer constant initialized with 50.
p is a constant pointer which points to integer constant & currently holds address of no.



9) char Arr [] = {'a', 'b', 'c', 'd', 'e'};
char *p = Arr;
char *q = &(Arr [0]);
char *r = &(Arr [4]);

→ Arr is a one-dimensional array which contents five elements is of character data type and elements are initialized with a, b, c, d, e.
p, q & r are the pointer variable element of array Arr. p is 0th element of array q ~~is a~~ hold address of 0th ~~element~~ index of array r hold address of 4th ~~element~~ index of array

→



10] double Arr [] = {10.5, 20.6, 30.2};
double *p = Arr;
double *q = &(Arr[0]);
double *r = &(Arr[2]);

→

Arr is a one-dimensional array which contents three elements is of double data type and elements are initialized with 10.5, 20.6, 30.2. p, q, & r are the pointer variable element of Arr. p is 0th element of array, q is hold address of 0th index and r holds address of 2nd index.