

Victoria University of Bangladesh

Dept. of CSE

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Course Title: Structured Programming Languages.

Ans. to Que. 9 NO-1 (a)

Type variable name = value where type can be a C type such as int, float, char. and the variable name is the name of the variable.

⑥

A function is a group of statements that together perform a task every program has at least one function which is main. A function declaration tells the computer about a function's name return type and parameters. A function definition provides the actual body of a function.

A function can also be referred as a method on a sub-routine or a procedure

An ideal function contains:

- ① Return type.
- ② Function name.
- ③ Parameters.
- ④ Function body.

Such as:

```

int max (int num1, int num2)
{
  int result;
  if (num1 > num2)
    result = num1;
  else
    result = num2;
  return result;
}

```


Return type: It is the type of value that functions returns to calling function after processing.

The average function receives two types of data it is an int value and a float value integers are whole numbers that can have both zero, positive and negative values but no decimal values. such as 0, -5, 10

Again, the float data type represents a floating point or decimal number. Such as 0.1243 and 12.45

(9)

Ans. to the Q. No. 1 (a)

Array: An array is a collection of similar data element stored at contiguous memory location. It is the simplest data structure where each data element can be accessed directly by only its index number.

Declaration of an array in C++

```
include <iostream>
using namespace std;
int main () {
    int arr[] = {10, 20, 30, 40, 50, 60};
    int n = size of (arr) / size of (arr[0]);
    for (int i = 0; i < n; i++) {
        cout << arr[i] << " ";
    }
    return 0;
}
```


b

if $a[3][2] = \{ \{5, 10\}, \{20, 24\}, \{30, 40\} \}$

it's an array of 3 rows and 2 columns

	1	2
0	5	10
1	20	24
2	30	40



	0	1
0	0,0	0,1
1	1,0	1,1
2	2,0	2,1

∴ the value of $a[2,0]$ is 30

$a[2,1]$ is 40

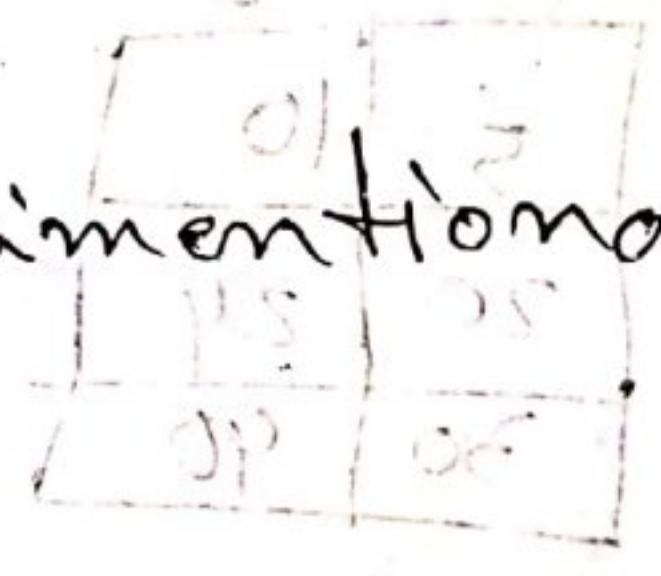
$a[1,1]$ is 24

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c (d)

A multi dimensional array can be termed as an array that stores homogeneous data in tabular form. Data in multidimensional arrays are sorted in row-major order.

The declaration of two dimensional array:
int two-d [x] [y]



The declaration of multi-dimensional array
data type array-name [size1] [size2] .. [sizeM]

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A Null Pointer is a pointer which points nothing

Some uses of the null pointer are.

a) To initialize a pointer variable when that pointer variable isn't assigned any valid memory address yet.

b) To pass a null pointer to a functional argument when we don't want to pass any valid memory.

Ans. to the Q No-3

(a)

Structure are a way to group several related variables into one place. Each variable in the structure is known as member of the structure.

```
struct my structure {
```

```
int my Num;
```

```
char my Letter;
```

```
};
```

unlike an array a structure can contain many different data types (int, float, char).

using scanf() function:

A scanf() will read input from the keyboard till new line is encountered then store it in the string. After that printing is possible.

A file is a collection of data stored in the secondary memory. So far data was entered

into the programs through the keyboard and files are used to storing information that can be processed by the programmer. C provides a number of built-in functions. There are two functions available to perform opening and

closing operation:

↓ open() :- create a new file or open an existing file.

↓ close() :- to close a file

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There are many modes for opening a file:

* r = open a file in read mode.

* w = open's or create a text file in write mode.

* r+ = open's a file in both read and write mode.

* a+ = open's a file in both read and write mode.

* w+ = open's a file in both read and write mode.