

IDHAYA COLLEGE FOR WOMEN

KUMBAKONAM – 612 001



DEPARTMENT OF INFORMATION TECHNOLOGY

SEMESTER : **II**

CLASS : **I IT**

SUBJECT- INCHARGE : **M.A. SHANTI**

SUBJECT NAME : **PROGRAMMING IN C**

SUBJECT CODE : **16SCCIT 2**

TOPIC : **UNIT I- V(2 MARKS)**

Unit – 1

2 Marks:

1. What is various form of main() function?

main function:

main(), int main(), void main(), main(void), int main(void),void main (void).

2. Define #define directive.

#define directive:

- ❖ #define is a pre-processor compiles directive and should not end with a semicolon.
- ❖ Symbolic constants are declared at this directive.
- ❖ #define are usually placed before the main().

3. Define #include directive.

#include directive:

- ❖ Library functions are grouped category wise and stored in different files called header files.
- ❖ We can access the file stored in the library by the pre-processor directive.
- ❖ #include as follows: #include<file name>.

4. Steps in executing as C program.

Executing as C program:

- ❖ Creating the program.
- ❖ Compiling the program.
- ❖ Linking the program with functions that are needed from the C library.
- ❖ Executing the program.

5. What is Program?

Program:

- ❖ Executing a sequence of precise instructions.

6. What is Character set?

Character set:

- ❖ The characters that can be used to form words, numbers and expressions depend upon the computer on which the program ia run.
 1. Letter (uppercase A.....Z)
 2. Digits (0-9)
 3. Special characters [, ;]
 4. White spaces [new line, blank space]

7. What is Tokens?

Tokens:

- ❖ In C program the smallest individual units are known as C tokens.

Keywords ,Constants, Identifiers, String, Operators, Special symbols

8. What is Keywords and identifiers?

Keywords:

- ❖ Fixed meanings and meanings cannot be changed.
- ❖ Keywords must be written in “ lower case “.

9. What is Constants:

Constants:

- ❖ Fixed values and do not change during the execution of the program.

10. What is Variable?

Variable:

- ❖ Data name used to store a data value, may have different values at different times.
EX: Average, height.

11. What is Data type?

Data type:

- ❖ The variety of data types available allow the programmer to select the type appropriate to the needs of the application as well as the machine.
- ❖ Types: int, float, char, double.

12. What is Enumerated data type?

Enumerated data type:

- ❖ Enumeration is a user-defined data type which can be used to declare a variables that can have one of the values enclosed within the braces.
- ❖ Syntax: enum identifier V1, V2,.....Vn;
- ❖ Ex: enum day { Monday, tue,, sun };

13. Scanf and printf.

Scan f:

- ❖ The function which can be used to Reading a input character is known as “ scan f “ function.
- ❖ Syntax: scanf (“ control string “, arg1, arg2,....., argn);
- ❖ Ex: scanf (“ %d “, & x);

Print f:

- ❖ The function which can be used to Writing a output character to the terminal is known “ print f “ function.
- ❖ Syntax: printf (“ control string “, arg1, arg2,....., argn);

14. Operator and its type.

Operator:

- ❖ To perform certain mathematical or logical manipulation.
 - Arithmetic Operators
 - Relational Operators
 - Logical Operators
 - Assignment Operators

- Increment and Decrement Operators
- Conditional Operators
- Bitwise Operators
- Special Operators

15. Conditional Operator.

Conditional Operator:

- ❖ The operators `?` : works as follows: `exp1` is evaluated first. If it is non-zero (true), then the expression `exp2` is evaluated and become the value of the expression. If `exp1` is false, `exp3` is evaluated and its value becomes the value of the expression.
- ❖ Syntax: `exp1? exp2: exp`
- ❖ EX: `a=10;`
`b=15;`
`x=(a>b) ? a:b;`

UNIT II:

2 Marks:

1. What is String Input and Output?

We need not consider constructing for loops to get and print more than one character at a time. We can make use of similar functions for getting whole strings from standard input and printing them to standard output.

2. Define Scanf

`scanf` takes a variable number of arguments from standard input. We can get values for more than one variables with a single call to this function. All you have to do is specify the type of value you want with the conversion specifier operator (`%`) and the specifier and/or size.

3. What is the Specifications for Real Number?

`%f` specifies to accept floating point values. Ironically enough, the `%d` specifier will not accept decimal places. In order to accept a real number you would need to make a `scanf` call as follows: **Ex : `scanf("%f", &anum);`**

4. Define IF statement & Their types

The If statement is powerful decision making statement and is used to control the flow of execution of statements The If statement may be complexity of conditions to be tested

- (a) Simple if statement
- (b) If else statement
- (c) Nested If-else statement
- (d) Else –If ladder

5. Define IF ELSE general format

If the test expression is true then true-block statement are executed, otherwise the false –block statement are executed. In both cases either true-block or false-block will be executed not both.

The If statement is an extension of the simple If statement the general form is

```
    If (test expression)
    {
        true-block statements;
    }
else
    {
        false-block statements;
    }
statement – x;
```

6. What is Branching?

Branch is the term given to the code executed in sequence as a result of change in the program's flow; the program's flow can be changed by conditional statements in that program. Diagram 2 shows the link between selection (decision making) and branching (acting).

7. Define The Switch Statement:

“Switch statement” is another type of “conditional statement” used by programmers. Switch is widely used for menus.

```
Switch (variable)
{
    Case 1: statement1 break;
    Case 2: statement 2 break;
    Case 3:statement 3 break;
    Default: default statement break;
```

UNIT III 2 Marks:

1. What is an array?

- ✧ An array is defined as a sequenced collection of related data items that share a common name.
- ✧ An array is a collection of elements of the same data type.
- ✧ Examples of an array: List of employees in an organization, List of daily rainfall data etc.

2. What are the types of array?

There are three different types of array. They are

- One dimensional array,

- Two dimensional array,
- Multi dimensional array.

3.What is a one-dimensional array? How can it be declared?

A list of items can be given one variable name using only one subscript and such a variable is called a single-sub-scripted variable or a one-dimensional array. A single dimensional array can be declared as follows,
type variable-name[size];

4.What is two-dimensional array? How can it be declared?

Two dimensional arrays are the arrays that consists of two dimensions. This array consists of m no.of rows and n no.f columns. A two dimensional array can be declared as follows,
type variable-name[row-size][column size];

5. What is multi dimensional array? How can it be declared?

C allows arrays of three or more dimensions. The exact limit is determined by the compiler. The general form of multi-dimensional array is type array-name[s1][s2][s3].....[sm]; where si is the size of i th dimension. Eg.; int survey[3][4][5];

6.What are static arrays?

The process of allocating memory at compile time is known as static memory allocation and the arrays that receive static memory allocation are called static arrays.

7.What are dynamic arrays?

The process of allocating memory at run time is known as dynamic memory allocation and the arrays that receive dynamic memory allocation are called dynamic arrays.

8. What is a character array?

A String is a sequence of characters that is treated as a single data item. Any group of characters (except double quote sign) defined between double quotation marks is a string constant. Eg.; printf(“\” well done!”\”)

9. What are the common operations performed on character strings?

The common operations that can be performed on character strings are

- ❖ Reading and writing strings,
- ❖ Combining strings together,
- ❖ Copying one string to another,
- ❖ Comparing strings for equality,
- ❖ Extracting a portion of a string.

10.How to declare a string variable?

C doesn't support strings as data types. But it allows us to represent strings as character arrays. A string variable is any valid C variable name and is always declared as an array of characters.

char string-name[size]; The size determines the number of characters in the string-name.

UNIT-IV 2 MARKS

1. What is a Structure?

C supports a constructed datatype known as structure. A structure is a convenient tool for handling a group of logically related data items. Example: time, seconds, minutes, hours.

2. General Form Of Structure:

```
Struct tag_name
{
Data_type member1;
Data_type member2;
-----
-----
};
```

3. What is Dot Operator?

The link between a member and variable is established using the member operator .which is known as “dot operator” or “period operator”. example: Book1.price

4. What is a Union?

Union is same a structure but share common memory location.

5. General form of union?

```
Union item
{
int m;
float x;
char c;
} code;
```

6. Sizeof Structure?

The actual size of these variables in terms of bytes may change from machine to machine. We may use the unary operator size of to tell us the size of a structure.

Syntax: **sizeof (Struct x)**

7. What is a Bit Field?

A bit field is a set of adjacent bits whose size can be from 1 to 16 bits in length. A word can therefore be divided into a number of bit field. The name and size of bit field are defined using a structure.

Syntax:

```
Struct tag_name
{
Data_type name 1:bit_length;
```

```

Data_type name 2:bit_length;
-----
-----
Data_type name N:bit_length;
}

```

8. Define Pointer? How to initialize pointer?

Pointer is a derived datatype in c. pointer contain memory address as their value. Pointer can be used to access and manipulate data stored in the memory. The process of assigning the address of a variable to a pointer variable is known as initialization.

Example: int quantity ;
int *p ;
P=& quantity ;

9.Storage Cells:

The computer’s memory is a sequential collection of “ storage cells “. Each cell commonly known as byte has a number called address associated with it. The addresses are numbered consecutively, starting from zero.

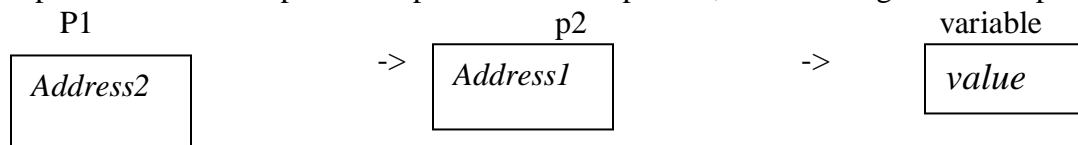
10. Declaring a Pointer Variable:

Pointer variables contain addresses that belong to a separate datatype they must be declared as pointer.

Syntax: **data_type.*pt_name;**

11.Chain of pointers:

It is possible to make a pointer to point to another pointer, thus creating a chain of pointer



12.Multiple indirections:

This point to the location that contains the desired value. This is known as multiple indirections. Example: int **p2;

UNIT V
2 MARKS:

1. What is Dynamic memory allocation functions in C?

C language offers 4 dynamic memory allocation functions. They are,malloc(),calloc() realloc(),free()

2. What is malloc() function in C:

malloc () function is used to allocate space in memory during the execution of the program.

malloc () does not initialize the memory allocated during execution. It carries garbage value.

malloc () function returns null pointer if it couldn't able to allocate requested amount of memory.

3. What is realloc() function in C:

- realloc () function modifies the allocated memory size by malloc () and calloc () functions to new size.
- If enough space doesn't exist in memory of current block to extend, new block is allocated for the full size of reallocation, then copies the existing data to new block and then frees the old block.

4. Difference between static memory allocation and dynamic memory allocation in C:

S.no	Static memory allocation	Dynamic memory allocation
1	In static memory allocation, memory is allocated while writing the C program. Actually, user requested memory will be allocated at compile time.	In dynamic memory allocation, memory is allocated while executing the program. That means at run time.
2	Memory size can't be modified while execution. Example: array	Memory size can be modified while execution. Example: Linked list

5. Define Linked List

A structure which contains a data element and a pointer to the next node is created by, struct list { int value; struct list *next; }; This defines a new data structure called list, which contains two members. The first is an integer called value.

6. Define Pre Processor

The C preprocessor is a macro processor that is used automatically by the C compiler to transform your program before actual compilation. It is called a macro processor because it allows you to define macros, which are brief abbreviations for longer constructs.

