QB365 Question Bank Software Study Materials

Functions Important 2,3 & 5 Marks Questions With Answers (Book Back and Creative)

11th Standard

Computer Science

Total Marks : 75

2 Marks

10 x 2 = 20

1) Define Functions.

Answer : A large program can typically be split into small subprograms (blocks) called as functions where each sub-program can perform some specific functionality. Functions reduce the size and complexity of a progrann, makes it easier to understand, test, and check for errors.

2) Write about strlen() function.

Answer : The strelen() takes a null terminated byte string source as its argument and returns its length. The length does not include the null(\0) character.

3) What are importance of void data type.

Answer : **Void type has two important purposes:**
(I) To indicate the function does not return a value
(ii) To declare a generic pointer

4) What is Parameter and list its types?

Answer : Arguments or parameters are the means to pass values from the calling function to the called function. The variables used in the function definition as parameters are known as formal parameters. The constants, variables or expressions used in the function call are known as actual parameters.
Types : Default arguments and Constant Arguments.

5) Write a note on Local Scope.

Answer : (i) A local variable is defined within a block. A block of code begins and ends with curly braces {}.
(ii) The scope of a local variable is the block in which it is defined.
(iii) A local variable cannot be accessed from outside the block of its declaration.
(iv) A local variable is created upon entry into its block and destroyed upon exit

6) Write the output for the following.
(i) isalpha ('A')
(ii) tolower ('B')
(iii) toupper('m')
(iv) isdigit('8')

Answer : (i) 1 (ii) b (iii) M (iv) 0

7) Name the functions which takes a single argument in radians?

Answer : (i) sint)
(ii) cost)

8) What are the advantages of Inline function?

Answer : **Advantage of inline functions:**
(i) Inline functions execute faster but requires more memory space.
(ii) Reduce the complexity of using STACKS

9) What is constant arguments and write its syntax?

Answer : The constant variable can be declared using const keyword. The const keyword makes variable value stable. The constant variable should be initialized while declaring. The const modifier enables to a sign an initial value to a variable that cannot be changed later inside the body of the function.

Syntax;

< returntype > < functionname > (const < datatype variable=value >)

10) How to define the function?

Answer : Return Data_type function_name (parameter list)

{

body of the function

}

3 Marks 10 x 3 = 30

11) What is Built-in functions?

Answer : C++ provides a rich collection of functions ready to be used for various tasks. The tasks to be perfornned by each of these are already written, debugged and compiled, their definitions alone are grouped and stored in files called header files. Such ready-touse sub programs are called pre-defined functions or build-in functions.

12) What is the difference between isupper() and toupper() functions?

Answer :

ISUPPER()	**TOUPPER()**
This function is used to check the given character is upper case	This function is used to convert the given character into its uppercase
This function will return 1 if true otherwise 0	This function will return the uppercase equivalent of the given character. If the given character itself is in upper case, the output will be the same.
Example: isupper('a') will return 0	Example: toupper('a') will return 'A'.

13) Write about strcmp() function.

Answer : The strcmp () function takes two arguments: string 1 and string 2. It compares the contents of string 1 and string 2 lexicographically.

The strcmp() function returns a:

(i) Positive value if the first differing character in string 1 is greater than the corresponding character in string 2. (ASCII values are compared).

(ii) Negative value if the first differing character in string 1 is less than the corresponding character in string 2.

(iii) 0 if string 1 and string 2 are equal.

14) Write short note on pow() function in C++.

Answer : The pow() function returns base raised to the power of exponent. If any argument passed to pow() is long double, the return type is promoted to long double. If not, the return type is double. The pow() function takes two arguments.

(i) base- the base value

(ii) exponent - exponent of the base

Example :

cout < < pow(5,2);

output

25

15) What are the information the prototype provides to the compiler?

Answer : (i) The return value of the function is of type long.

(ii) fact is the name of the function.

(iii) The function is called with two arguments:

The first argument is of int data type.

The second argument is of double data type.

int display(int, int) // function prototype

The above function prototype provides details about the return data type, name of the function and a list of formal parameters or arguments.

16) What is default arguments? Give example.

Answer : In C++, one can assign default values to the formal parameters of a function prototype. The Default arguments allows to omit some arguments when calling the function.

When calling a function,

For any missing arguments, complier uses the values in default arguments for the called function.

i. The default value is given in the form of variable initialization.

Example: void defaultvalue(int n1-10. n2=100);

ii. The default arguments facilitate the function call statement with partial or no arguments.

Example: defaultvalue(x,y);

defaultvalue(200,150);

defaultvalue(150);

defaultvalue(x,150);

iii. The default values can be included in the function prototype from right to left, ie, we cannot have a default value for an argument in between the argument list.

Example: void defaultvalue(int n1-10, n2);//invalid prototype

void defaultvalue(int n1, n2 = 10);//valid prototype

17) Write a C++ program to find area a circle.

Answer :

```
#include < iostream >
using namespace std;
double area(const double r,const double pi=3.14)
{
return(pi*r*r);
}
int main 0
{
double rad,res;
cout < < "\nEnter Radius :";
cin > > rad; .
res=area(rad);
cout < < "\nThe Area of Circle =" < < res;
return 0;
}
```

Output:

```
Enter Radius :5
The Area of Circle =78.5
```

18) What is return statement with example?

Answer : The return statement stops execution and returns to the calling function. When a return statement is executed, the function is terminated immediately at that point. The return statement is used to return from a function. It is categorized as a jump statement because it terminates the execution of the function and transfer the control to the called statement.

Example: return(a+b); return(a);

return; // to terminate the function

19) What is scope resolution operation?

Answer : 1. The scope operator reveals the hidden scope of a variable. The scope resolution operator (::) is used for the following purposes.

2. To access a Global variable when there is a Local variable with same name. An example using Scope Resolution Operator.

20) Define function. What is need of function?

Answer : A large program can typically be split into small subprograms (block) called as functions.

Uses:

Functions reduce the size and complexity of a program, makes it easier to understand, test and check for errors.

5 Marks 5 x 5 = 25

21) Explain Call by value method with suitable example.

Answer : This method copies the value of an actual parameter into the formal parameter of the function. In this case, changes made to formal parameter within the function will have no effect on the actual parameter.

Example :

```
#include < iostream >
using namespace std;
void display(int x)
{
int a=x*x;
cout < < "\n\nThe Value inside display function (a*a):"< < a;
}
int maint()
{
int a;
cout < < "\nExample : Function call by value:";
cout < < "\n\nEnter the Value for A:";
cin > > a;
display(a);
cout < < "\n \nThe Value inside main function" < < a;
return(0);
}
```

Output:

```
Example: Function call by value
Enter the Value for A:5
The Value inside display function (a * a) : 25
The Value inside main function 5
```

22) What are the different forms of function return? Explain with example.

Answer : The return statement

Returning from the function is done by using the return statement. The return statement stops execution and returns to the calling function. When a return statement is executed, the function is terminated immediately at that point. The return statement is used to return from a function. It is categorized as a jump statement because it terminates the execution of the function and transfer the control to the called statement.

Syntax:

```
return expression/variable;
Example: return(a+b); return(a);
return; // to terminate the function
```

The Returning values:

The functions that return no value is declared a void. The data type of a function is treated as int, if no data type is explicitly mentioned. For example,

For Example:

```
int add (int, int);
add (int, int);
```

In both prototypes, the return value is int, because by default the return value of a function in C++ is of type int.

Returning Non-integer values

A string can also be returned to a calling statement.

```
#include < iostream >
#include< string.h >
using namespace std;
char*display()
{
return ("chennai");
}
int main()
{
char s[50];
strcpy(s,display());
cout< < "\n Example:Function with Non Integer Return"< < s;
return(0);}
```

Output:

```
Example: Function with Non Integer Return Chennai
```

The Returning by reference

```
#include< iostream >
using namespace std;
int main()
{
int nl-150;
int &nlrefn1;
cout< < "\nThe Value of NI =" < < n< < "and nl Reference="< < n/ref;
n1ref++;
cout< < "\n After nl increased the Value of N1 ="< < nl;
cout< < "and nl Reference="< < ntref;
return(0);
```

Output:

```
The Value of N1 - 150 and n1 Reference - 150
After n1 increased the Value of N1 =151 and n1 Reference = 151
```

23) Write a program to accept any integer number and reverse it.

Answer :

```
#include< iostream >
using namespace std;
int reverse (int n);
int main()
{
int n=0, result = 0;
cout< < "Enter number:"";
cin > > n;
result reverse (n);
cout< < "Reverse number is:" < < result < < endl;
}
int reverse (int n)
{
int temp=0, rev = 0;
while (n! =0).
{
temp=n;
rev= (rev*10) + temp;
n = n/10;
}
return rev;
}
```

Output:

```
Enter number: 1 2 3
Reverse number: 3 2 1
```

24) Write the program using isalpha() function for given character is an alphabet or not.

Answer : The isalpha() function is used to check whether the given character is an alphabet or not.

Syntax:

int isalpha(char c);

This function will return 1 if the given character is an alphabet, otherwise 0. The following statement assigns 0 to the variable n, since the given character is not an alphabet.

int n = isalpha('3');

But, the statement given below displays 1, since the given character is an alphabet.

cout < < isalpha('a');

Program:

```
#include< iostream >
#include< stdio.h >
#include< ctype.h >
using namespace std;
int main()
{
char ch;
cout < < "\n Enter a character: ";
ch = getchar();
cout < < "\n The Retum Value of isalpha(ch) is :" < < isalpha(ch);
}
```

Output-1:

```
Enter a character: A
The Retum Value of isalpha(ch) is :1
```

Output-2:

```
Enter a character:7
The Return Value of isalpha(ch) is :0
```

25) Explain string manipulation functions in C++ with their syntax.

Answer : The library string.h has several common functions for dealing with strings stored in arrays of characters.

(i) strcpy():

This function takes two arguments: taxget and souce. It copies the character string pointed by the , source to the memory location pointed by the target. The null terminating character (\0) is also copied.

Syntax:

strcpy(target, source);

(ii) strlen():

The strlen() takes a null terminated byte string source as its argument and returns its length. The length does not include the null (\0) character.

Syntax: strlen(source);

(iii) strcmp():

The strcmp() function takes two arguments: string 1 and string 2. It compares the contents of string 1 and string 2 lexicographically.

Syntax:

strcmp(string1, string2);

(iv) strcat():

This function takes two arguments: target and source. This function appends copy of the character string pointed by the source to the end of string pointed by the target.

Syntax:

strcat(target, source) ;

(v) strupr():

The strupr() functions is used to convert the given string in to uppercase letters.

Syntax:

strupr(string);

(vi) strlwr():

This function is used to convert the given string in to lowercase letters.

Syntax:

strlwr (string);