

March 2019

Q. 1(A) Select correct option from the following and rewrite sentence :

- (a) Bulleted list in HTML is created by _____ tag. 1
 (i) ~~(i)~~ (ii) (iii) (iv)

- (b) _____ is very useful in situation when data is to be stored and retrieved in reverse order. 1
 (i) Stack (ii) Queue (iii) Linked List (iv) Tree
- (c) What will be the value of x after execution of following expression in C++? 1
 $X = ++m + n ++;$ where $m = 10$ and $n = 15$.
 (i) 25 (ii) 27 ~~(iii)~~ 26 (iv) 28
- (d) _____ is free software. 1
 (i) UNIX (ii) WINDOWS
~~(iii)~~ LINUX (iv) DOS

P	S
11	11
15	16
<u>26</u>	<u>27</u>

Ans.: (a) - (i), (b) - (i), (c) - (iii), (d) - (iii)

Q. 1(B) Answer any two of the following :

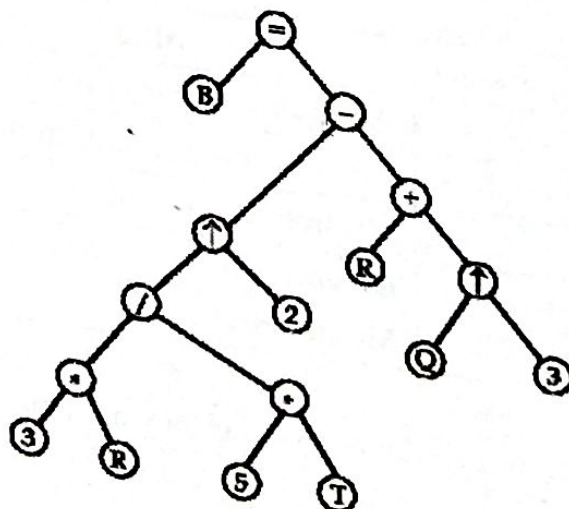
- (a) List any six features of LINUX Operating System. (Ch. 1/Q. 10/Pg. No. 1-5) 3
 (b) What is a pointer in C++ ? Give suitable example. (Ch. 3/Q. 29/Pg. No. 3-21) 3
 (c) Write advantages and disadvantages of HTML. (Ch. 4/Q. 3,4/Pg. No. 4-2) 3

Q. 2(A) Answer any two of the following :

- (a) Explain the syntax of C++ program structure with example. (Ch. 3/Q. 16/Pg. No. 3-12) 3
 (b) Explain Binary Search algorithm with a suitable example. (Ch. 2/Q. 23/Pg. No. 2-17) 3
 (c) Write the difference between Worm and Virus. (Ch. 1/Q. 73/Pg. No. 1-38) 3

Q. 2(B) Answer any one of the following :

- (a) Explain operator overloading with suitable example. Write any two characteristics of operator overloading. (Ch. 3/Q. 61, 62, 63/Pg. No. 3-48) 4
 (b) What is Binary Tree ? Draw the Tree diagram for the expression.
 $B = (3R/5T)^2 - (R + Q^3)$ (Ch. 2/Q. 40/Pg. No. 2-31) 4



Q. 3(A) Answer any two of the following :

- (a) What is a constructor in C++ ? State any four special characteristics of constructor function. (Ch. 3/Q. 51 & Q. 52/Pg. No. 3-39) 3
- (b) Explain the function of the following in Operating System : 3
- (i) Virus Detection (ii) Virus Removal
- (iii) Virus Prevention
- (Ch. 1/Q. 72/Pg. No. 1-37)
- (c) Write two features of each of data structure : 3
- (i) Record (Ch. 2/Q. 26/Pg. No. 2-19)
- (ii) Array (Ch. 2/Q. 12/Pg. No. 2-9)
- (iii) Linked List (Ch. 2/Q. 46(b)/Pg. No. 2-35)

Q. 3(B) Answer any one of the following :

- (a) Explain any two types of type conversion in C++ with example. (Ch. 3/Q. 66/Pg. No. 3-51) 4
- (b) What are the functions of Memory management ? State any two types of continuous Real Memory Management System. (Ch. 1/Q. 42/Pg. No. 1-20) 4

Q. 4(A) Answer any two of the following :

- (a) Explain any six operators used in C++. 3

Ans. : An operator is a symbol that tells the computer to perform mathematical and logical manipulation. Operators are used in program to manipulate data and variables. C++ has a rich set of operators. They are classified into following categories.

- | | |
|--------------------------------------|----------------------------|
| 1. Arithmetic Operators | 2. Relational Operators |
| 3. Logical Operators | 4. Assignment Operators |
| 5. Increment and Decrement Operators | 6. Conditional Operators |
| 7. Bitwise Operator | 8. Special Operator of C++ |

1) Arithmetic Operators :

C++ performs its numerical calculations by means of five arithmetic operators as follows:

Operators	Meaning
+	Addition or unary plus
-	Substraction or unary minus
*	Multiplication
/	Division
%	Modulo division

2) Relational Operators :-

Relational Operators compare values to see if they are equal or if one of them is greater than other and so on.

Following operators are used to perform relation between two variables:-

Operators	Meaning
<	Less than
<=	Less than or equal to
>	Greater than
>=	Greater than or equal to
==	Equal to
!=	Not equal to

- 3) **Logical Operators** :- The operators which are used to perform logical operation such as logical AND, logical OR and logical NOT are called logical operators. These are as follows-

Operator	Meaning
&&	Logical AND
	Logical OR
!	Logic NOT

- 4) **Assignment Operator** :- Assignment Operators are used to assign the result of an expression or constant to a variable. Assignment operator in C++ is equal sign(=). In addition to this operator, C++ also includes following composite operator.

Operator	Meaning
+=	$x += y$ means $x = x + y$
-=	$x -= y$ means $x = x - y$
*=	$x *= y$ means $x = x * y$
/=	$x /= y$ means $x = x / y$
%=	$x \% = y$ means $x = x \% y$

- 5) **Increment and Decrement operators** :- C++ has two unary operators called increment and decrement operators. These are very useful operators used for adding one and subtracting one from variable.

Operator	Meaning
++	Increment Ex. $b++$ means $b = b + 1$
--	Decrement Ex $b--$ means $b = b - 1$

Each of these operators has two version -preversion and post version .

Example of pre version is

if $x = 50$ and $y = ++x$ then y value will be 51

Example of post version is

if $x = 50$ and $y = x++$ then $y = 50$ and x will be 51

- 6) **Conditional Operators :-** C++ includes very special operator called the ternary or conditional operator. It is called ternary because it uses three expressions. Its general format is

expression 1 ? expression 2 : expression 3

Ex - $x = y > 5 ? 50 : 80$

It means x is assigned the value 50 if y is greater than 5, otherwise x is assigned 80.

- 7) **Bitwise Operators :-** These are certain situations where in bitwise operations are to be performed. These permits the programmer to access and to manipulate individual bits. Bitwise operators can be used with char and int data types.

Operator	Meaning
~	Bitwise One's complement
&	Bitwise AND
	Bitwise OR
^	Bitwise x OR
>>	Bitwise right shift
<<	Bitwise left shift

- 8) **Special operators of C++ :-**

New operators in C++ are

Scope resolution operator	::
Pointer to member declarator	:: *
pointer to member operator	-> *
pointer to member operator	.*
memory release operator	delete
line feed operator	endl
memory allocation operator	new
Field width operator	setw

- (b) Write a short note on Paging. (Ch. 1/Q. 49/Pg. No. 1-23)

3

- (c) Explain Pointer Array with example. (Ch. 2/Q. 25/Pg. No. 2-18)

3

Q. 4(B) Answer any one of the following :

- (a) With reference to process management, explain the terms :

4

(i) External Priority (ii) Purchase Priority

(iii) Internal Priority (iv) Time Slice

(Ch. 1/Q. 35/Pg. No. 1-16)

- (b) Explain memory representation of linked list with example.
(Ch. 2/Q. 32/Pg. No. 2-23)

4

Q. 5

Solve any two of the following :

- (a) Write a C++ program to accept a sentence (maximum 50 characters) and print sentence in reverse. (Ch. 3/Q. 123/Pg. No. 3-101)

Ans. :

5

Method 1 :

```
#include<iostream.h>
#include<conio.h>
#include<string.h>
void main()
{
    char S[50];
    int i, L;
    cout<<"Enter a setnece(50 chars)";
    cin.getline(S,50);
    L=strlen(S);
    cout<<"\n Sentence in reverse";
    for(i=L-1;i>=0;i--)
    {
        cout<<S[i];
    }
    getch();
}
```

Method : 2

```
#include<iostream.h>
#include<conio.h>
#include<string.h>
void main()
{
    char S[50];
    int i, L;
    cout<<"Enter a sentence(50 chars)";
    cin.getline(S,50);
    cout<<"\n Sentence in reverse";
    strrev(S);
    cout<<S;
}
```

Method 3 :

```
#include<iostream.h>
#include<conio.h>
{
    char S[50];
    int i, L;
    cout<<"Enter a sentence(50 chars)";
    cin.getline(S,50);
    for(i=1;S[i]!='\0';i++)
    {
        L++;
    }
    cout<<"\n Sentence in reverse";
    for(i=L;i>=0;i--)
    {
        cout<<S[i];
    }
}
```


- (b) Write a function in C++ to accept four integers. Find the smallest integer and print it. (Ch. 3/Q. 115/Pg. No. 3-96) 5
- (c) Write exact output of the following HTML code : 5

```
<HTML>
  <BODY>
    <OL start = "10">
      <li> English
      <li> Second language
    </OL>
    <OL Type = "a">
      <li> Compulsory
      <li> Optional
    </OL>
    <UL type = "Square">
      <Li> Science
      <Li> Arts
      <Li> Commerce
    </UL>
  </BODY>
</HTML>
```

Ans. :

- 10. English
- 11. Second Language
- a. Compulsory
- b. Optional
- Science
- Arts
- Commerce

OR

Q. 5 Solve any two of the following :

- (a) Write a C++ program to find smallest in an array of 10 floats using pointer. 5

Ans. :

```
#include<iostream.h>
#include<conio.h>
void main()
{
    clrscr();
    float a[10],small,*p;
    int i;
```

```
cout<<"\n Enter 10 numbers";
for (i=0;i<10;i++)
{
    cin>>a[i];
}
p=&a[0];
small=*p;
for(i=0;i<10;i++)
{
    if(*p<small)
    {
        small=*p;
    }
    p++;
}
cout<<"\nsmallest element="<<small;
getch();
}
```

(b) Write a class based program in C++ to find area of a Triangle.

5

Ans. :

```
#include<iostream.h>
#include<conio.h>
class triangle
{
    private:
        float a,b,h;
    public:
        void area();
};
void triangle:: area()
{
    cout<<"Enter base and height"<<endl;
    cin>>b>>h;
    a=0.5*b*h;
    cout<<"\nArea of triangle="<<a;
}
void main()
{
    triangle t;
    t.area();
}
```

(c) Write HTML code for the following output :

5

My Page	_ ■ X
HTML is hypertext	
Markup language. The basic language of HTML is ASCII code.	
This is only text oriented language.	
■	<u>One</u>
■	<u>Two</u>
1.	One
2.	Two

Ans. :

```
<HTML>
<HEAD>
  <TITLE> My Page</TITLE>
</HEAD>
<BODY>
  <P> HTML is a hypertext </P>
  <P>Markup, language. The basic language of HTML is ASCII code. The start tag and end
    tag.
  </P>
  <P> This is only text oriented language.
  </P>
  <HR>
  <B> <U> <UL TYPE="SQUARE">
    <LI>One</LI>
    <LI>Two</LI>
  </UL>
  </U> </B>
  <HR>
  <OL type="1">
    <LI>One</LI>
    <LI>Two</LI>
  </OL>
</BODY>
</HTML>
```