

**International Indian School -Dammam**  
**Class : XI- Computer Science 2009-10 B.S.S**  
**Worksheet – C++ - Arrays , By – Mukesh Goel**

1. What is an array ?
2. What are different types of arrays ? Give examples of each array type.
3. How are two dimensional arrays represented in memory ?
4. A string in C++ is an \_\_\_\_\_ of \_\_\_\_\_ type
5. Declare an array of 5 ints and initialize it to the first five even numbers .
6. What is the data type of elements of an array called ?
7. Give the outputs for the following

(i) 

```
void main()
{
    int b = 0;
    int c[ 10] = { 1, 2,3,4,5,6,7,8,9,0};
    for( int a = 0 ; a < 10 ; a ++ )
    {
        if (( c[a] % 2) == 0 )
            b += c[ a];
    }
    cout <<"b="<<b;
}
```

(ii) 

```
void main()
{ int P[ 2 ][ 4 ] = { 1 , 4 , 2 , 3 , 5 , 7 , 2 , 1 };
  cout << P [ 1 ][ 1 ] << P[ 0 ][ 1 ];
}
```

(iii) 

```
void main ( )
{
    char city [ 35 ] = " riyadh ";
    for ( int i = 1 ; i < 5 ; i ++ )
        cout.write( city , i );
}
```

8. Write the value of individual array elements

```
int arr[2][2] = { 1, 1, 2, 3 }
```

9. Write a program

- i) To find the sum of odd numbers present in an integer array S[10]
- ii) To print the sum of diagonal elements of a 2-D integer array ( both the diagonals )
- iii) To Print the lower triangle of the given m x n matrix
- iv) To find the row sum and column sum of a matrix.
- v) To transpose a matrix
- vi) To concatenate two strings using string library functions and without using library functions
- vii) To check if a string is palindrome or not
- viii) To replace every space in a string with a hyphen
- ix) To reverse all the strings stored in an array.
- x) To find the largest and smallest element in a vector
- xi) To sum the elements above and below the main diagonal of a matrix.
- xii) To Print the Upper triangle of the given m x n matrix
- xiii) To count the number of vowels , words in a given line of text.
- xiv) To read marks of 50 students and store them under an array
- xv) To find the sum of squares of elements on the diagonal of a square matrix n x n .

10. Find the syntax errors if any in the following program

- ```
(i) #include< iostream.h>
void main()
{
    int sum[2, 4 ];
    for( i = 0 ; i < 2 ; i ++ )
    {
        for( j = 0 ; j < 3 ; j ++ )
        {
            cout << sum ;
        }
    }
}

(ii) #include< iostream.h>
void main()
{
    int i ;
    int a[6]={0 , 1,8,7,6,4};

    for( i = 0 ; i <= 15 ; i ++
    cout<< a[ i ] ;
}

(iii) #include< iostream.h>
void main()
{
    int ch = 9 , sch = 90;
    char s [ 2 , 2 ] ;
    if ( ch <= 9 )
    cout<< ch;
    for( int x = 0 ; x < 2 ; x ++ )
    for(int y = 0 ; y < 2 ; y ++ )
    {
        if ( y == 0 ) s[ x ][ y ] ='A';
        else s[ x ][ y ] ='B';
        cout<< s[ x ][ y ] ;
    }
    getch ( );
}
```

**International Indian School -Dammam**  
**Class : XI- Computer Science -2009-10 , B.S.S**  
**Worksheet – C++ - Functions , By – Mukesh Goel**

1. Differentiate between Call by value and Call by reference.
2. Define actual parameters and formal parameters.
3. What is meant by function declaration?
4. Define function prototype.
5. Write a function to find the sum of odd numbers.
6. Suggest the storage class for the following variables
  - i) a normal variable
  - ii) a very heavily used variable
  - iii) a variable that should return its value after the function call is over
  - iv) a variable that spans multiple files
  - v) a variable global in one file and not available in another file
7. Distinguish between islower ( ) and toupper( )
8. Find the syntax error(s) , if any in the following
  - i)

```
#include<iostream.h>
int calc( int x , int y)
main ( )
{ int a;
cin>> calc ( );
int calc( 2, 5);
}
```
  - ii)

```
#include<iostream.h>
void main( )
{
int exe( int a , int b );
int ans ;
ans = exe(x , y );
cout << ans;
}
int exe ( int a , int b)
{
return ;
}
```
9. Give the outputs of the following
  - i) 

```
#include<iostream.h>
void main()
{
void test( int , int );
int a = 3 , b = 5;
test( a , b);
cout << a<< " " <<b;
}
void test ( int x , int y )
{
x = x * x ;
y += x* y ;
cout<< x << " " <<y ; }
```

```

ii) #include<iostream.h>
void cal ( int x , int & y , int & z )
{ x + = z ;
  y * = 3 ;
  z + = y + x ;
  cout << x << " " << y << " " << z ; }
void main( )
{ int a , b , c ;
  a = 2 , b = 3 , c = 4 ;
  cout << a << b << c << endl ;
  cal ( a , b , c ) ;
  cout << a << b << c ;
}

```

```

iii) #include<iostream.h>
void cal ( int x , int & y , int & z )
{ x + = z ;
  y * = 3 ;
  z + = y + x ;
  cout << x << " " << y << " " << z ; }
void main( )
{ int a , b , c ;
  a = 2 ;
  cal ( a , a , a ) ;
  cout << a ;
}

```

```

iv) void main( )
{
  char a [ ] = " ScHoOL";
  int l = strlen ( a ) ;
  for( int i = 0 ; i < l ; i ++ )
  if ( islower ( a [ i ] )
    a [ i ] = toupper ( a [ i ] ) ;
  else if ( a % 2 == 0 )
    a [ i ] = tolower( a [ i ] )
  cout << " New message : " << a ;
}

```

```

v) #include<iostream.h>
void execute( int & x , int y = 200 )
{
  int temp = x + y ;
  x + = temp ;
  if( y != 200 )
  cout << temp << x << y << endl ;
}
void main ( )
{
  int a = 50 , b = 20 ;
  execute( b ) ;
  cout << a << b << endl ;
  execute( a , b ) ;
  cout << a << b << endl ; }

```

```

vi) #include<iostream.h>
int &max( int &x , int & y)
{   if ( x > y )
    return ( x );
    else
    return ( y );
}
void main( )
{
int A= 10 , B = 13 ;
max ( A , B ) = -1;
cout <<" A = "<< A << " B="<< B <<endl;
max ( B,A ) = 7;
cout <<" A = "<< A++ << " B="<< B-- <<endl;
max ( A , B ) = 3 ;
cout << " A = "<< A << " B ="<< B << endl ;
}

```

10. Write a C++ program that uses a function to sum n natural numbers starting from a given number.

11. Identify the problem with the following code and suggest a way to correct it

```

void large ( int & a , int & b );
main ( )
{ large ( 5, 7);
}
void large( int & a , int & b)
{ if( a > b)
  a = -1 ;
  else
  b = -1 ;
}

```

12. Given the following code fragment

```

int x , y ;
main ( )
{ char ch ;

    { int i = 0 ;

        }
}
void fl( char z )
{ short a , b ;
}

```

write the scopes for all the variables mentioned above.

13. Write a function to take an int argument and return 0 if the given number is prime otherwise return -1

14. Write user defined functions celtofar() and fartocel() to convert temprature from Celsius to Farenheit and farenheit to Celsius respectively. [  $f = 1.8 * c + 32$  ]