BHARATIYA VIDYA BHAVANS V.M PUBLIC SCHOOL,VADODARA
ANNUAL EXAMINATION ,MARCH 2016

STD:XI   **SUB:COMPUTER SCIENCE(083)**   **MM:70**

DATE:04 /03/16   **TIME:3 HRS**

No. of Pages:3

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Instructions:

All questions are compulsory

Programming Language: C++

I Answer the following questions

Q1. Convert the following: **[4]**

    1. $B2F_{16}=X_8$

    2. $84_{10}=X_2$

    3. $0.0101_2=X_{10}$

    4. $24.6_8 = X_{10}$

Q3. What is encapsulation? How it is implemented?   **[2]**

Q4.What are identifiers? What are the rules followed while naming the identifiers?   **[2]**

Q5. Differentiate between the following giving examples   **[4]**

    a. break and exit()

    b. Global variable and local variables

Q6. Write the size of the following in bytes: **[2]**

a.) char address[40];   b.) int marks[20];   c.) union student { int roll ;float marks;};

d.) struct student { int roll , marks;   char n[20];};

Q7. Evaluate the following expressions for integers a=6 , b=10, c=5:   **[2]**

    a.) !a*b+c+b/c-3<a+b-c*a/2

    b.)!(a+b+c*5/3&&a*b/c||a/b+c)

Q8. What is type casting? Explain with the help of an example.   **[2]**

Q9. What is #define? Explain its use with example.   **[2]**

Q10. Why is use of comments and indentation essential in a program?   **[2]**

Q11. Write the header files, syntax, use , and example(how it is used) for the following functions: **[8]**

    (i) strcpy()((ii) strcmp( ) (iii) rand( ) (iv) isupper()

II . Correct the following C++ code and underline the corrections made: **[4]**

```
1. #include<iostream.h>
   main()
   {int N=20;
   for(i=0 ; i<n ; i++)
    { int p=0;
     p=p+i;
    }
    cout<<p;
   }
2. #include<iostream.h>
   void main()
   { int NUM1,NUM2,NUM3;
    cin<<NUM1<<NUM2;
    ADD(int NUM1,NUM2);
    cout<<NUM3;}
   ADD(int NUM1,NUM3)
```

```
{ return NUM1+NUM3; }
```

III. Write the outputs of the following.(Assuming all required header files are included)   **[6]**

```
1.  int g=10;
    main()
    { int g=5;
      cout<<g;
      cout<<++g;
      cout<<::g++<<g;  }
```

```
2.void Position(int &C1,int C2=3)
{ C2+=5;
  C1+=C2; }
void main()
 { int P1=20, P2=4;
Position(P1);
cout<<P1<<","<<P2<<end1;
 Position(P2,P1);
cout<<P1<<","<<P2<<end1; }
```

```
3. #include<iostream.h>
   int add(int) ;
   main( )
   { int N ,y,s ;
    cin>>N;
    clrscr();
   for(int i=0; i<N ; i++)
  { cin>>y ; s=add(y); }
    cout<<s;}
   int add(int x)
   { static int a=0;
    a=a+x;
    return a;} where N=3 and values of y entered by the user are 7,6,3
```

QIV Write: (do not write the main() function)   **[2 x 2=4]**
a) A function **REVERSE( )** to find and return the reverse of a number N,where N is an integer and is passed as an argument to the function. The function should return an integer.
b) A function **dec_to_bin( )** which accepts a number in decimal number system as an argument and print its binary equivalent. The function should return nothing.

QV Write user friendly programs for the following   **[3*6=18]**
a) To accept an integer N and print Nth term of the following series.
    The series is 1 5 9 13 ……….
    For eg: for N=5
    The output should be:17
b) To accept a matrix of n x n order and display the sum of elements of each row.
c) To accept marks of 5 students in 3 subjects . Print the average marks of each student. Also if the average marks are more than 50, display "Selected" on the screen else display "Not Selected".
d)) To accept two strings from the user and copy the smaller string at the end of the bigger string. Display the newly created string. If both strings are of same length then display "Copying not required".

e) To insert a number at the required position in the list of N numbers. N,element and position to be accepted from the user.

For example: if the array is : 2 5 8 4

if element to be inserted is 7 at the position 3

the resultant array should be 2 5 7 8 4

f) To accept a number N and print the following pattern

   For eg: for N=5   the pattern should be

```
        $
      $ $ $
    $ $ $ $ $
  $ $ $ $ $ $ $
 $ $ $ $ $ $ $ $ $
```

QVI Write user friendly programs for the following   **[2x4=8]**

a) WAP to accept an array of n names and swap each name with the name present at next position . Accept the number of names n(an even number) from the user.

   Eg. If entered array is amit sumit ravi kavit jay sam

   The output should be: sumit amit kavit ravi sam jay

b) Define a structure Leader in C++ with following description:

   _ A data member R No (Registration Number) of type long

   _ A data member Name of type string

   _ A data member Votes of type int

   _ A data member Remarks of type string

Define the following functions

*A function **void result (int,char[ ])** to assign Remarks as per the votes obtained by a candidate. Votes range and the respective Remarks are shown as follows:

Score	Remarks
>=200	Popular
less than 200	Not Popular

* A function **void Input(Leader&)** to allow user to enter values for RNo, Name,

   Score & call function **result( )** to assign the remarks.

* A function **void Output (Leader)** to allow user to view the content of all the data members.

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