SBOA SCHOOL & JUNIOR COLLEGE, CHENNAI 101
COMPUTER SCIENCE
CLASS: XI HALF YEARLY EXAMINATION – 2016

MAX MARKS:70 CODE - A DURATION : 3 Hours

- **All questions are compulsory.**
- **Do not change the order of the questions while answering.**

I 1. Write about non preemptive scheduling [1]
2. What is Multiprogramming O.S ? [1]
3. Differentiate between compiler and interpreter. [1]
4. Differentiate between Freeware and Shareware software. [1]
5.What do you mean by Round Robin scheduling technique? [1]

II 1. What is Explicit type conversion? Give the suitable expression . [2]
2. Find the output for the following code. [1]

```
void  main()
  {char ch=98;
   int x=ch;
   if (x)
      { x--; cout<<x<<(char)x;}
   else cout<<x--<<(int)ch;
```

3. Classify the following variable names of c++ into valid and invalid category
(i) 1no (ii) num 1 (iii) num (iv) num1num (v) num+1 (vi) num.1 [2]
4. Identify the resultant datatype and print the result for the following expression. [2]
long double P=6.9; char C=65; short int S=20; signed float F=2.5;
P * F - (C +S) + (S++) * sizeof(F)
5. Rewrite the following program after removing the syntactical errors(if any). And [2]
underline each correction.

```
void main()
{  int a=1250, char  ch=1250;
    a=+ch;
    cout<<ch- =3;        }
```

III 1. Differentiate between comma operator and sizeof() operator. [1]
2. Write a C++ program to accept an integer and if the sum of digits of that number is even then find the square of the given number otherwise cube of the given number. [2]
3. Write a c++ program to find the sum of the following series [3]
$(x/1^2)+(x^3/1^2+ x^3/3^2)+(x^5/1^2+ x^5/3^2+ x^5/5^2)+.....+$
$(x^n/1^2+ x^n/3^2+.....+ x^n/n^2)$
4.In the following program, find the correct possible output(s) from the optons: [2]

```
void main()
    {int y=0;
      while(y<=10)
        {int x =1;
          do{x++;
              if(y%x==0)     cout<<"*";
                if(x%3==2)  cout<<"#";
            } while(x<3);
         y+=6;
         cout<<"%";
        }
    }
```

(i) #%#% (ii) *#*%*#*% (iii) **%**% (iv) **#%**#%
5. Find the output of the following program code. [2]

```
void main()
{  int  a=5, b=0;   char  ch='D' , ch1='\0';
   if ( a  ||  b!=0)
        cout<< ++a << b - -<<"\n";
   if  ( ch  &&  a)
        cout<< --ch<<a++<<"\n";
   else
      if (ch1)
          cout<< - -a<<ch++<<"\n";
      else
          cout<<++b<<ch --;          }
```

IV 1. Find the index position of the character 'W' and 'T' in the following array declaration.
char str[ ] = "WE ARE BEST" [1]

2. Write a C++ program to accept an integer array and swap the elements which are divisible by 3 on left side and the elements which are divisible by 5 on right side and rest of the elements in the middle positions of the array. [3]

3. Find the output of the following segment [3]

```
void main()
  { int a[]= {18,12,45,54,71}, i;
  clrscr();
     for (i=0;i<4;i++)
        if (!(a[i]%9))
           a[i+1] =a[i]*2;
        else a[i]=a[i+1];
     for ( i=0;i<5;i++)
           cout<<a[i]<<'@';  }
```

4. Write a C++ program to accept a line of text and a character and replace all the occurrences of the given character in the string with its previous letter and the rest with its successive letter, if any character other than alphabet replace with '#'. [2]

5. Write a C++ program to input an two dimensional integer array of NXN size and display in the following format middle row should be a square of that number and the middle column should be square root of that number and middle element of that array should be zero (N should be odd) [3]

if the array is				output is			
	1	9	3		1	3	3
	4	5	6		16	0	36
	7	36	9		7	6	9

V 1. Differentiate between Actual and Formal parameters. Illustrate with examples. [2]

2. Write a function in C++ which accepts N strings and its size as arguments and return number of palindrome strings in it. [3]

3. Write a function program to Merge two arrays A and B and store it in an array C. The array A containing odd numbers arranged in descending order and B containing even numbers arranged in ascending order and C should be in ascending order. [3]
Eg. A array -> 9,7,5,1 B array -> 2,4,6,8 Resultant array C -> 1,2,4,5,6,7,8,9

4. Find the output of the following program. [4]

```
#include <iostream.h>
int X=5;
int  &Modify_Array(int &Temp)
{       if(Temp % 5 = = 0)
                X+=Temp;
        else
                Temp+ =X+ 3;
        return Temp;
}

void Do_Updation(int m, int &n)
{        int X=5;
        X++;
        m = n +:: X;
        if(n > 30)
                n = Modify_Array (n);
        else
                Modify_Array (n) = m;
        cout<<m<<" : "<<n<<":"<<X<<":"<<::X<<endl;
}
void main()
{       int X =5, Y = 22;
        Do_Updation(::X,Y);
        cout<<X<<" : "<<Y<<":"<<::X<<endl;
        Do_Updation(Y,X);
        cout<<X<<": "<<Y<<":"<<::X<<endl;
}
```

5. Write a C++ program called **Sum_Unit** passing two dimensional integer array and its size as parameter the formal parameter is int A[][4] , int N, int M and display the sum of all the values, which are ending with 5 (i.e.,units place is 5.) [2]

For example if the content of aray is : Output is the sum of 55+555+35

55	44	555
19	35	50

VI 1. Give the output of the following program code segment : [3]

```
void Change_Case(char msg[],int k)
 { for(int cnt=0; cnt<k;cnt++)
     if(islower(msg[cnt]))
                msg[cnt]=toupper(msg[- -cnt]);
   else if(isupper(msg[cnt]))
                msg[cnt]=tolower(msg[cnt]);
   else if(isdigit(msg[cnt]))
                msg[cnt]=msg[cnt]+1;
   else
                msg[cnt]=msg[cnt++];
}
void main()
  { char str[]="Arise Awake TILL 2018 ! ";
    int Len=strlen(str);
    Change_Case(str,Len);
    puts(str);
  }
```

2. Name the header files to which the following functions belong to : [2]

(i) isalnum() (ii) setw() (iii) exit() (iv) getch()

VII 1. Write the steps in developing the program. [1]

2. Change the following program code according to prettyprinting concept. [2]

```
int main() {  int a;char s[ ]=”abc”,ch=’o’;
int c=a+b/ch--*3-2+s[2]; for(i=0;s[i]!=’\0’;i++)if (a>25) cout<<a;cout<<b;}
```

3. Define Algorithm. [1]

4. Write about Adaptive Maintenance. [1]

VIII 1. Convert the following Octal into Decimal number : 65.43 [1]

2. Convert the following Decimal into Hexa decimal : 5485 [1]

3. Subtract using 1’s compliment method : 45-125 [2]

4. Subtract the following using 2’s complement method: 39 - 19 [2]

5. Convert the following from hexadecimal to octal ACE7.5E [2]

6. Represent the following binary no in its octal and hexadecimal form [2]

1101101111.11111010

&&&&&&&&&&&&&

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MAX MARKS:70 CODE - B DURATION : 3 Hours

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2. What is Multiprogramming O.S ? [1]
3. Differentiate between compiler and interpreter. [1]
4. Differentiate between Freeware and Shareware software. [1]
5.What do you mean by Round Robin scheduling technique? [1]

II 1. What is Implicit type conversion? Give the suitable expression . [2]
2. Find the output for the following code. [1]

```
void main()
  {char ch=98;
   int x=ch;
   if (x)
      { x--; cout<<x<<(char)x;}
   else cout<<x--<<(int)ch;
```

3. What is wrong with the following statements?
a) const int y; b). char ch=A; c). long float x; d) . cin>>a>>'\n'; [2]
4. Identify the resultant datatype and print the result for the following expression. [2]
long double P=660; int C=65; double S=20; signed float F=10.0;
P /F - (C +S) + (S++) * sizeof(F)
5. Rewrite the following program after removing the syntactical errors(if any). And [2]
underline each correction.

```
void main()
{  int a=1250, char  ch=1250;
    a=+ch;
    cout<<ch- =3;       }
```

III 1. Differentiate between comma operator and sizeof() operator. [1]
2. Write a C++ program to accept an integer and if the sum of digits of that number is even then find the square of the given number otherwise cube of the given number. [2]
3. Write a c++ program to find the sum of the following series [3]
$(x/1^2)+(x^3/1^2+ x^3/3^2)+(x^5/1^2+ x^5/3^2+ x^5/5^2)+.....+$
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4.In the following program, find the correct possible output(s) from the optons: [2]

```
void main()
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        {int x =1;
          do{x++;
              if(y%x==0)    cout<<"*";
                if(x%3==2)  cout<<"#";
            } while(x<3);
         y+=6;
        cout<<"%";
      }
  }
```

(i) #%#% (ii) *#*%*#*% (iii) **%**% (iv) **#%**#%
5. Find the output of the following program code. [2]

```
void main()
{  int  a=5, b=0;   char  ch='D' , ch1='\0';
    if ( a  ||  b!=0)
          cout<< ++a << b - -<<"\n";
    if  ( ch  &&  a)
          cout<< --ch<<a++<<"\n";
    else
        if (ch1)
            cout<< - -a<<ch++<<"\n";
        else
```

```
cout<<++b<<ch --;                }
```

IV 1. Find the index position of the character 'W' and 'T' in the following array declaration. [1]

```
char str[ ] = "WE ARE  BEST"
```

2. Write a C++ program to accept an integer array and swap the elements which are divisible by 3 on left side and the elements which are divisible by 5 on right side and rest of the elements in the middle positions of the array. [3]

3. Find the output of the following segment [3]

```
void main()
   { int a[]= {18,12,45,54,71}, i;
   clrscr();
        for (i=0;i<4;i++)
             if (!(a[i]%9))
                  a[i+1] =a[i]*2;
             else a[i]=a[i+1];
         for ( i=0;i<5;i++)
                       cout<<a[i]<<'@';  }
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Eg. A array -> 9,7,5,1 B array -> 8,6,4,2 Resultant array C -> 1,2,4,5,6,8,9

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```
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        m = n +:: X;
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                n = Modify_Array (n);
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}
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{       int X =5, Y = 22;
        Do_Updation(::X,Y);
        cout<<X<<" : "<<Y<<":"<<::X<<endl;
        Do_Updation(Y,X);
        cout<<X<<": "<<Y<<":"<<::X<<endl;
}
```

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```
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 { for(int cnt=0; cnt<k;cnt++)
     if(islower(msg[cnt]))
                msg[cnt]=toupper(msg[- -cnt]);
   else if(isupper(msg[cnt]))
              msg[cnt]=tolower(msg[cnt]);
   else if(isdigit(msg[cnt]))
              msg[cnt]=msg[cnt]+1;
   else
              msg[cnt]=msg[cnt++];
}
void main()
  { char str[]="Arise Awake TILL 2018 ! ";
    int Len=strlen(str);
    Change_Case(str,Len);
    puts(str);
  }
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