INTERNATIONAL INDIAN SCHOOL, DAMMAM
Model Examination - January 2015
Computer Science
Class XI

Time: 3 Hrs
Marks: 70

Set A

1. What is IPO cycle? *(1)*

2. What are the key features of 2nd generation computers? *(1)*

3. What are utilities? Give an example. *(1)*

4. What do you mean by shareware? *(1)*

5. Differentiate Real-time OS and Timesharing OS? *(2)*

6. Explain the terms: (i)Fire wire port (ii)Instruction set of a processor *(2)*

7. Convert: *(2)*
   i. $(4D5.8)_{16} = (\_\_\_\_)_{10}$
   ii. $(2547.6)_8 = (\_\_\_\_)_2$

8. What is the role of comments and indentation in a program? *(2)*

9. What is meant by source code and object code? *(2)*

10. Explain runtime errors with a suitable example. *(2)*

11. Define the terms: i) Guard Code ii)Bug *(2)*

12. Explain any two different types of program maintenance. *(2)*

13. What are escape sequences? *(1)*

14. Which among the following are valid identifiers? *(2)*
    Char, val@2, _int, col sum, 3rd_num, Const, num_3, break

15. Name the header files required to execute the following program: *(2)*

```
void main()
{
  char name[20];
  gets(name);
  int l = strlen(name);
  for(int i=0; i<l;++i)
     if(isdigit(name[i]))
     { cout<<"No digits allowed";  exit(0); }
     else name[i]=toupper(name[i]);
  puts(name);}
```

16. Determine the value of f if x=3 and y=4 *(1)*

```
f=x*4/5*y+y/8+8-x+5/8
```

17. Write the C++ expression for the following: *(2)*

i. $\frac{-b+\sqrt{b^2-4ac}}{2a}$

ii. x is even

18. What will be the output of the following code? *(1)*

```
int a=10, b=8;
if(a%2)
{
  if ((a==9) ||(b<=a))cout<<"Good";
  else cout<<"Better";
}
else cout<<"Best";
```

19. Rewrite the following using do-while construct: *(2)*

```
for(int c=0,d=2;c<=d;c+=2,d++)
  cout<<c*d;
cout<<"Series over";
```

20. What will be the output of the following code? *(2)*

```
void main()
{
  int x=6, y=8;
  int z=x-- + ++y;
  cout<<x<<' '<<y++<<endl;
  cout<<--x<<' '<<y;
}
```

21. Explain the use of scope resolution operator with an example. *(2)*

22. Rewrite the following code after correcting syntax errors. Underline the corrections made. *(2)*

```
#include <iostream.h>
void main()
{
  int first=35, second=25;
  manip(first;second);
  manip(second);
}
void manip(int val1,val2=30)
{
  val1=val1-val2;
  cout<<val1,val2;
}
```

23. Write the output of the following code:

a. (2)

```
#include <iostream.h>
#include <ctype.h>
void main()
{
 char SampleText[]="This$OUTPUT!";
 for(int I=0;SampleText[I]!='\0';I++)
 {
   if(!isalpha(SampleText[I]))
      SampleText[I]='#';
   else if(isupper(SampleText[I]))
      SampleText[I]=SampleText[I]+1;

   else
      SampleText[I]=SampleText[I+1];
  }
  cout<<SampleText;
}
```

b. (3)

```
#include<iostream.h>
void convert(int arr[],int size,int mid)
{
  for(int i=0; i<size; i++)
  {
    if(i<mid)arr[i]+=i;
    else arr[i]*=i;
  }
}

void show(int arr[],int size)
{
  for(int i=0; i<size; i++)
  {
    (i%2==0)? cout<<arr[i]<<'$':cout<<arr[i]<<endl;
  }
}

void main()
{
  int scores[]={5,10,15,20,25,30};
  convert(scores,6,3);
  show(scores,6);
}
```

24. For the following C++ program, choose a possible output from options (i) to (iv) given below: (2)

```
#include<iostream.h>
#include<stdlib.h>
void main()
{
  randomize();
  int x=5,N;
  for(int i=1;i<=4;i++)
  {
    N=25+random(x);
    cout<<N<<':';
    x--;
  }
}
```

i) 29:26:25:28: ii) 24:29:25:26: iii) 29:26:28:28: iv) 29:26:25:26:

25. What is the use of #define preprocessor directive? Give example. *(2)*

26. Rewrite the following code after correcting syntax errors. Underline the corrections made. *(2)*

```
#include<iostream.h>
struct  MyBox
{
  int Length,Breadth,Height=10;
}
void Dimension(MyBox M)
{
  cout<<M.Length<<"x"<<M.Breadth<<"x";
  cout<<Height<<endl;

}
void main()
{
  MyBox B1={10,15,20},B2;
  B2={5,10,25};
  Dimension(B1);
  B1.Length++;
  B2=B1;
  Dimension(B2);
}
```

27. Write a C++ program to sum the series $1+x^2+x^4+.....$up to **n** terms. *[The value of x and the number of terms to be input by the user.]* *(3)*

28. Write a C++ program to read a string and check if it is a palindrome. An appropriate message is to be displayed. *(3)*

29. Write a C++ program that takes an integer as input and finds the sum of its digits. *[e.g. if the input is 1365 the output will be 1+3+6+5=15]* *(4)*

30. Write a C++ program that takes an array as input and swaps every element at an even position with the next element. *[e.g. if the input array is {1,0,2,8,3}, the output will be {0,1,8,2,3}]* **(4)**

31. Write a C++ program to read a 2-D array as input and count the number of values that end with the digit 3. **(4)**

32. Write a C++program to add two matrices. **(4)**
[e.g. if $A=\begin{bmatrix}1 & 0\\ 9 & 2\end{bmatrix}$ *and* $B=\begin{bmatrix}2 & 8\\ 7 & 3\end{bmatrix}$ *then* $A+B=\begin{bmatrix}3 & 8\\ 16 & 5\end{bmatrix}$*]*