

3rd SEMISTER B-TECH EXAMINATION, 2005
OBJECT ORIENTED PROGRAMMING USING C++

Full Marks-70

Time:3 Hours

Question No. 1 which is compulsory and any five questions from the remaining questions.

The figures in the right-hand margin indicate marks for the questions.

1. Answer the following questions: (2 x 10)

- (i) `#include<iostream.h>`
`void main()`
`{`
`int i;`
`for(i=0;i<=10;i++)`
`if(!(i%2))`
`continue;`
`else`
`cout<<i;`
`}`
- (ii) `#include<iostream.h>`
`void main()`
`{`
`int i,j=20;`
`for(i=0;i<=10;i++);`
`cout<<j;`
`cout<<i;`
`}`
- (iii) `#include<iostream.h>`
`class abc`
`{`

```

int x;
public : int y;
void get(int z)
{ x = z; }
void disp(void)
{cout<<x;}
};

```

```

void main()
{
    int s;
    abc a;
    a.y=10;
    s=a.y;
    a.get(s);
    a.disp();
}

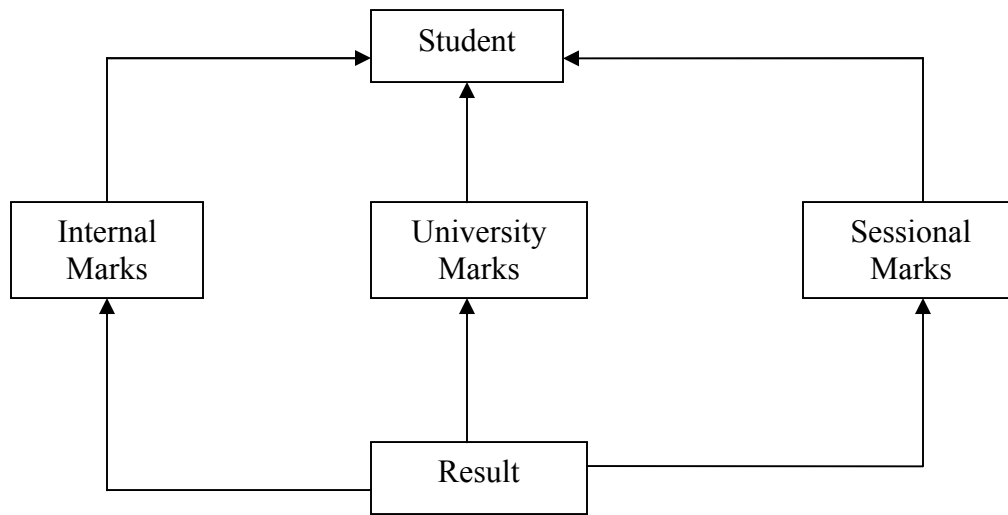
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(iv) #include<iostream.h>
void main()
{
    int i=0,x=0;
    for(i=1;i<10;i++)
    {
        if (i%2= =1)
            x+=i;
        else
            x--;
        cout<<x;
        break;
    }
    cout<<x;
}

```

- (v) `#include<iostream.h>`
`void f(int &x)`
`{ x+=10;}`
`void main()`
`{`
`int m=10;`
`f(m);`
`cout<<m;`
`}`
- (vi) `#include<iostream.h>`
`void main()`
`{`
`float total=100;`
`float &sum=total;`
`total +=20;`
`cout<<total<<sum;`
`}`
- (vii) Which of the following are good reasons to use an object oriented language?
- You can define your own data types.
 - An object oriented program can be taught to correct its own errors.
 - It is easier to conceptualize an object oriented program.
 - Both (a) and (c) above.
- (viii) In C++, a function contained within a class is called _____.
- (ix) In C++, a structure brings together a group of _____.
- (x) Discuss function overloading in C++.
- Write a program to add two vectors using overloaded operation. (10)
 - Write a program to subtract two complex numbers using overloaded operator. (10)
 - Write overloaded functions to convert an int to an ASCII string and to convert an ASCII string to float. (10)
 - Write a program in C++ to process the result of a student as per the following structure. Use virtual base classes. (10)



6. Write a program in C++ to create classes to represent a point in polar and rectangular co-ordinates. Make provision to convert one co-ordinate to other and display them. (10)
7. Define a class student with member variables as roll number and names. Generate an object and initialize its variables using constructors and display them. (10)
8. Write notes on: (10)
 - (i) Exception Handling.
 - (ii) Templates.
 - (iii) Data encapsulation.
 - (iv) Classes vs. Structures.

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