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B. Tech  
BCSE 3201

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**THIRD SEMESTER EXAMINATION – 2005**

**OBJECT ORIENTED PROGRAMMING USING C++**

Full Marks : 70

Time : 3 Hours

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

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

1. Answer the following in brief : 2×10

```
i/ #include <iostream.h>
void main ()
{   int i;
    for (i=0;i<=10;i++)
    if    (!(i%2) )
        continue;
    else
        cout<<i;
}
```

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```
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();
}
```

```
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;` *120.00*  
`float &sum=total;`  
`total+=20;`  
`cout <<total<<sum;`  
`}`

vii. Which of the following are good reasons to use an object oriented language ?

- (a) You can define your own data types.
- (b) An object oriented program can be taught to correct its own errors.
- (c) It is easier to conceptualize an object oriented program
- (d) 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++

2. Write a program to add two vectors using overloaded operator. 10

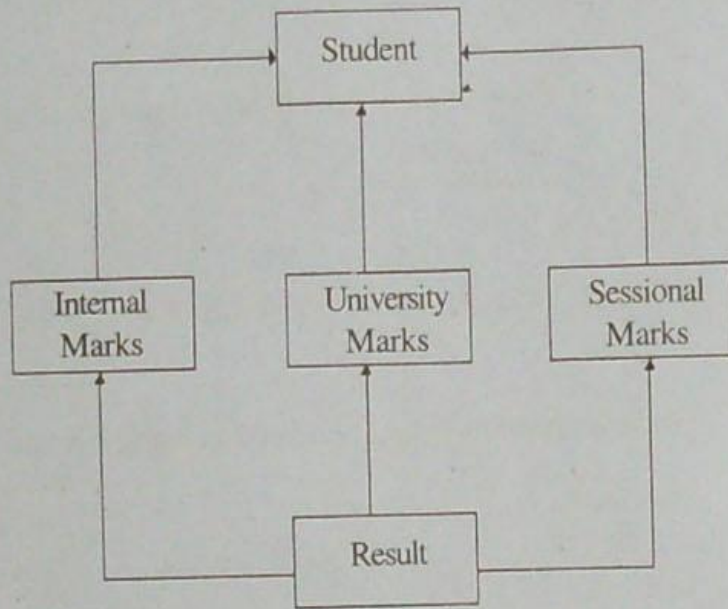
3. Write a program to subtract two Complex numbers using overloaded operator. 10

4. Write overloaded functions to convert an *int* to an *ASCII* string and to convert an *ASCII* string to *float*.

10

5. Write a program in C++ to process the result of a

student as per the following structure. Use virtual base classes. 10



16. 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

17. Define a **class** student with member variables as roll-number and names. Generate an object and initialise its variables using constructors and display them. 10

18. Write notes on :

10

- (i) Exception Handling
- (ii) Templates
- (iii) Data encapsulation
- (iv) Classes vs. Structures.

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