

Registration No:

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Total Number of Pages: 02

B.TECH
BECS2212

3rd Semester Regular / Back Examination 2015-16
C++ AND OBJECT ORIENTED PROGRAMMING
BRANCH(S): BIOMED,BIOTECH,CHEM,CIVIL,EEE,ELECTRICAL,ENV,
FASHION,FAT,MINERAL,MINING,MM,MME,PLASTIC,TEXTILE
Time: 3 Hours
Max Marks: 70
Q.CODE: T553

Answer Question No.1 which is compulsory and any five from the rest.
The figures in the right hand margin indicate marks.

Q1 Answer the following: (2 x 10)

- Define C++? Why it is termed as middle level language?
- Why TypeQualifiers are used in c++ and what are they?
- How many types of string representations are provided by C++ and what are they?
- What is Encapsulation? How Data Encapsulation differs from Data Abstarction?
- Which headerfiles provides member functions for repositioning the the file-position pointer and Named the required member functions?
- What is the output of the following program with justification?

```
#include<iostream.h>
class Test
{
    static int x;
    public:
    static void SetData(int xx)
    {
        x = xx;
    }
    void Display()
    {
        cout<< x ;
    }
};
int Test::x = 0;
int main()
{
    Test::SetData(33);
    Test::Display();
    return 0;
}
```

- What will be the output?
#include<iostream.h>
long Test(int x, int y = 5, float z = 5)
{
 return(++x * ++y + (int)++z);
}

```
int main()
{
cout<<Test(20, 10);
return 0;
}
```

h) What will be the output?

```
#include<iostream.h>
int main()
{
int x = 10;
int&y = x;
x = 25;
y = 50;
cout<< x << " " << --y;
return 0;
}
```

i) Why exceptions are preferred in modern c++ ?

j) Can we overload a function by simply changing the return type? Justify your answer?

- Q2** Write a program implementing linked list as a class. Also Perform some required operations like inserting, deleting nodes & display the contents of entire linked list? **(10)**
- Q3** Write a program for developing a 2x2 matrix class which can handle integer matrices of different dimensions. Also overload the operator for addition, multiplication & comparison of matrices? **(10)**
- Q4 a)** Write a program to design a class representing the information regarding digital library (books, tape: book & tape should be separate classes having the base class as media). The class should have the functionality for adding new item, issuing, deposit etc. the program should use the runtime polymorphism. Books have title,pages,price and tapes have title,time,price? **(5)**
- b)** Write a program to find basis and dimension of a 2x2matrix? **(5)**
- Q5 a)** Write a program implementing stack and its push and pop operations using template class? **(5)**
- b)** write a program to show conversion from string to int and vice-versa? **(5)**
- Q6 a)** Write a Program to design a class complex to represent complex numbers. The complex class should use an external function (use it as a friend function) to add two complex numbers.The function should return an object of type complex representing the sum of two complex numbers? **(5)**
- b)** Write a Program to design a class having static member function named showcount() which has the property of displaying the number of objects created of the class? **(5)**
- Q7 a)** Write a program to implement the exception handling with rethrowing in Exception? **(5)**
- b)** Write a C++ program to display larger number among two numbers using function templates? **(5)**
- Q8 Short notes on any two (5 x 2)**
- a)** Virtual Function.
- b)** C++ Preprocessor
- c)** Copy Constructor
- d)** Storage Class