

Registration No. :

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Total number of printed pages – 7

B. Tech
BECS 2212

Third Semester Regular Examination – 2014
C++ AND OBJECT ORIENTED PROGRAMMING
BRANCH(S) : BIOMED, BIOTECH, CHEM, CIVIL, EEE,
ELECTRICAL, ENV, FASHION, MINERAL, MINING,
MM, MME, PLASTIC, TEXTILE

QUESTION CODE : H 390

Full Marks – 70

Time – 3 Hours

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

1. Answer the following questions :

2×10

- What is the difference between object oriented and object based programming language ?
- What is put to operator ? Why it is used ? It belongs to which header file ?
- What will be the output of the following program ?

```
#include<iostream.h>
class test
{
    static int x;
public:
    static void SetData(int xx)
    {
        x = xx;
    }
}
```

P.T.O.

```

    }
    void Display()
    {
        cout<< x;
    }
};
int test::x = 0;
int main()
{
    test::SetData(33);
    test::Display();
    return 0;
}

```



- (d) What do you mean by embedded assignment ? Give a suitable example.
- (e) What will be the output of the following program ?

```

#include<iostream.h>
class A
{
    public:
    struct B
    {
        int x;
        float y;
        void Function(void)
        {
            y = x = (x = 4*4);
            y = -y * y;
        }
        void Display()
        {

```

```

        cout<< y << endl;
    }
    }B;
}I;
int main()
{
    I.B.Display();
    return 0;
}

```

- (f) Distinguish between the following two statements :

Time T2(T1);

Time T2 = T1;

- (g) Name the operators that cannot be overloaded in C++? And why?
- (h) We have two classes X and Y? If a is an object of X and b is an object of Y and we want to say a = b. What type of conversion routine should be used and where?
- (i) What will be the output of the following program?

```

#include<iostream.h>
typedef void(*FunPtr)(int);
int Look(int = 10, int = 20);
void Note(int);
int main()
{
    FunPtr ptr = Note;
    (*ptr)(30);
    return 0;
}
int Look(int x, int y)

```

```
{
    return(x + y % 20);
}
void Note(int x)
{
    cout<< Look(x) << endl;
}
```

(j) What will be the output of the following program ?

```
#include<iostream.h>
class PowerFinder
{
public:
    void Power(int x = 1, int y = 1)
    {
        int P = 1, i = 1;
        while(++i <= y)
        {
            P *= x;
        }
        cout<< P << endl;
    }
};
int main()
{
    PowerFinder FP;
    FP.Power(2, 6);
    return 0;
}
```

2. (a) Write a C++ program to compute square root of any number without using any function. 5
- (b) Write a C++ program to compute $\sin(x)$ without using any library function. 5
3. (a) What is Exception and Exception Handling ? Write a C++ program which satisfy following condition :
- (i) A function to read two double types numbers from keyboard
- (ii) A function to calculate the division of these two numbers
- (iii) A try block to Throw an Exception When a wrong type of data is keyed in
- (iv) A try block to detect and throw an exception if the condition "divide by zero" occurs
- (v) Appropriate catch block to handle the exception thrown. 5
- (b) Explain why switch case is proffered over if else ladder ? Write a C++ program to compute factorial of a number using forloop, whileloop, and dowhileloop and inline function using class. 5
4. (a) Write a C++ program to insert 10 elements into a stack using push operation and then pop 3 elements and display rest using class and constructor. 5
- (b) What is function overriding ? Write a C++ program to find the perimeter of rectangle and square using function overriding and abstract class. 5

5. (a) Define operator overloading. Write a C++ programs to overload + operator using friend function and class concept. 5
- (b) What is the difference between constructor and function ? Define constructor overloading. Write a C++ Programs to find out area of Rectangle, circle, Triangle of three sides using constructor overloading. 5
6. (a) List the benefits of using pointer in character string. Write a C++ program to sort names of 5 countries using Pointer. 5
- (b) Write a C++ program that reads a text file and creates another file that is identical except that every sequence of consecutive blank spaces is replaced by a single space. 5
7. (a) What is Template ? Write a class Template to represent a generic vector. Include member functions to perform the following task : 5
- to create the vector
- to modify the value of a given element
- to multiply by a scalar vector
- to display the vector in the form (10,20,30,...)
- (b) Write a C++ program to sort 10 integers using bubble sort and template function. 5

8. Write short notes on any two :

5×2

- (a) Inline function
- (b) Hybrid Inheritance
- (c) polymorphism
- (d) Encapsulation.

