PARUL UNIVERSITY
FACULTY OF ENGINEERING & TECHNOLOGY
B.Tech. Summer 2018 - 19 Examination

Semester: 3   **Date: 28/05/2019**
Subject Code: 03105204   **Time: 02:00 pm to 04:30 pm**
Subject Name: Object Oriented Programming with C++   **Total Marks: 60**

Instructions:
1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 Objective Type Questions - (All are compulsory) (Each of one mark)   **(15)**
1. Define encapsulation property of an OOP language.
2. How to create pure virtual functions in c++?
3. Macros do not follow strict parameter type checking.
   a. True   b. False
4. How to create destructor in c++?
5. What is an abstract class?
6. What will be the output of following code?

```
int main()
{
int a[5] = {100,200,300,400,500};
int* p = a;
cout<< *++p<< endl;
cout<< *p++<< endl;
cout<< *p<< endl;
cout<<  ++*p<< endl;    }
```

7. What will be the output of following code?

```
class Base
{
public:
virtual void show()
{
cout<<" In Base ";
} };
class Derived: public Base
{
public:
void show()
{
cout<<"In Derived";
} };
int main(void)
{
   Base *bp, b;
   Derived d;
   bp = &d;
   bp->show();
   bp = &b;
   bp->show();
   return 0; }
```

   a. In Base In Base   b. In Derived In Derived
   c. In base In derived   d. In derived In Base
8. What is the purpose of 'delete' operator?
9. Static methods can access non-static members (data and methods)
   a. True   b. False
10. More than one constructor can be defined in a Class.
    a. True   b. False
    11. Which of the following operators are overloaded by default by the compiler in every user

defined classes?
I) Comparison Operator (==)
II) Assignment Operator (=)
a. Both 1 and 2 b. Only 1
c. Only 2 d. None of the two

12. What will be the output of following code?
```
#define MIN(a,b) (((a)<(b)) ? a : b)
int main ()
{
   float i = 100.1, j = 100.01;
   cout <<"The minimum is " << MIN(i, j) << endl;
   return 0;
}
```
a. 100.01 b. 100.1
c. compile time error d. none of the mentioned

13. What will be the output of following code?
```
class Point {
 Point()
{
cout << "Constructor called";
} };
int main()
{
   Point t1;
   return 0;
}
```
a. Compiler Error b. Runtime Error
c. Constructor called d. None of the above

14. What is the return value of f(p, p) if the value of p is initialized to 5 before the call?
```
int f(int &x, int c)
{
   c  = c - 1;
   if (c == 0) return 1;
   x = x + 1;
   return f(x, c) * x; }
```
a. 3024 b. 6561
c. 55440 d. 161051

15. What is template in c++?

Q.2 Answer the following questions. (Attempt any three) **(15)**
A) Differentiate: Procedure oriented language and Object oriented language
B) Write a program to overload postfix ++ operator.
C) Explain following terms used in C++:
1. Enumerate data type 2. Reference variable.
D) Write a program to demonstrate the use of default arguments.

Q.3 A) Create two classes Demo1 and Demo2 containing private variables data_demo1 and data_demo2 **(07)**
respectively. Using a common friend function, perform multiplication operation between data_demo1
and data_demo2.
B) Explain the following conversions with example: **(08)**
1. class type to basic type 2. class type to class type
OR
B) What is the purpose of *"this"* pointer? What are the applications of *"this"* pointer? Explain with **(08)**
example.

Q.4 A) Explain multipath inheritance. Write a program to demonstrate the use of virtual base class. **(07)**
OR
A) Explain multiple and multilevel inheritance with example. **(07)**
B) Explain various file mode parameters in C++. Write a program to copy the contents of a source **(08)**
file student1.txt to a destination file student2.txt character by character.