

Vidyalankar

S.Y. Diploma : Sem. IV [CO/CD/CM/CW/IF]

Object Oriented Programming

Prelim Question Paper

Time: 3 Hrs.]

[Marks : 100

- Instructions :**
- (1) All questions are compulsory.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Preferably, write the answers in sequential order.

1. (a) Attempt any **SIX** of the following: [12]

- (i) What is the use of scope resolution operator?
- (ii) Enlist any two operators used with pointers.
- (iii) Calculate the size of object S1 defined in following class :

```
class student
{
    char name [10] ;
    int rollno;
    float percentage;
};
Student S1 ;
```

- (iv) Define Constructor and give syntax to declare it.
- (v) What is polymorphism? State its types.
- (vi) State different visibility modes used in inheritance.
- (vii) State the use of this pointer in C++.
- (viii) Give output for following code.

```
class employee
{
    public
    employee ( )
    {
        cout<<"Welcome\n" ;
    }
};
void main ( )
{
    employee E1, E2, E3 ;
}
```

(b) Attempt any **TWO** of the following: [8]

- (i) Explain the concept of multiple constructors in a class with suitable example.
- (ii) Enlist types of inheritance. Explain any two with suitable diagram.
- (iii) Differentiate between constructor and destructor?

2. Attempt any **FOUR** of the following: [16]

- (a) Write syntax with example for defining member function inside and outside class.
- (b) Explain how to use arrays within a class with a sample program.

- (c) Describe how to create array of objects with example.
- (d) Write any four benefits of Object Oriented Programming.
- (e) What is Friend function? Explain with suitable example why it is required.
- (f) Explain the concept of pointer to object with suitable example.

3. Attempt any **FOUR** of the following: [16]

- (a) Enlist the applications of oops?
- (b) Explain the concept of constructor with default arguments. Give suitable example.
- (c) Explain rules for Operator Overloading.
- (d) Write a C++ Program to overload '-' operator to negate data members of class.
- (e) Describe the concept of the concept Destructors with suitable example.
- (f) Explain how memory is allocated for objects created for class.

4. Attempt any **FOUR** of the following: [16]

- (a) Write a program to implement single inheritance with two classes.
- (b) Explain the concept of Virtual Base Class.
- (c) Explain function overloading.
- (d) Define and state two characteristics of static data member and static member function.
- (e) Explain Copy Constructor.
- (f) Write a program for searching an array of strings using pointer.

5. Attempt any **FOUR** of the following: [16]

- (a) Enlist any four rules for virtual functions.
- (b) Explain the concept of Pure Virtual Functions.
- (c) Write a program to reverse a string using pointers.
- (d) Differentiate between OOP and POP.
- (e) Explain the concept of Data Abstraction and Encapsulation.
- (f) Explain the terms – Dynamic Binding and Message Passing.

6. Attempt any **TWO** of the following: [16]

- (a) Write a program to implement a function friendly to two classes.
- (b) Write a program to implement addition of complex numbers using classes.
- (c) Write a program to demonstrate use of destructors in C++.

