Instructions:
(1) All Questions are Compulsory.
(2) Answers each next main question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

1. Attempt any FIVE of the following:
   (a) Explain with suitable example, syntax of for loop in C++.
   (b) Explain concept of abstract class.
   (c) Explain inline function.
   (d) Explain Memory management operators in C++.
   (e) List and explain use of any four file mode parameters.
   (f) Explain use of friend function.
   (g) Define concept of virtual base class.

2. Attempt any THREE of the following:
   (a) Write a C++ program that replaces the string “Computer” in the String “Diploma in Computer Engineering” with string “Information Technology”.
   (b) Explain multiple inheritance with example.
   (c) What is the difference between Function overloading and function Overriding.
   (d) Explain virtual base class with example.

3. Attempt any THREE of the following:
   (a) Write a program to replace occurrence of a particular character in a text file.
   (b) List the Rules for Overloading Operators.
   (c) State and describe visibility modes and its effects used in inheritance.
   (d) Explain friend function with example.

4. Attempt any THREE of the following:
   (a) Write a program to overload + operator to add 2 complex numbers.
   (b) Write a program to reverse decimal number (e.g. if decimal number is 123 then it display number as 321)
   (c) Differentiate between compile time and run time polymorphism.
   (d) Give syntax of and explain various functions related to ifstream and ofstream classes: seekp(), getline(), hide(), tail().
5. Attempt any TWO of the following: [12]
   (a) Write a program to copy contents of ABC.txt to XYZ.txt.
   (b) Write a program using pointer to search an element in an array.
   (c) Define a class named 'Bank Account' to represent following members:
       Data members:
       - Account Number
       - Name of Depositor
       - Account Type - Balance Amount
       Member functions:
       - Initialize members
       - Deposit Amount
       - Withdraw Amount
       - Display Balance
       Write a C++ program to test the Bank Account class for 10 customers.

6. Attempt any TWO of the following: [12]
   (a) Explain static data member and static member function with example.
   (b) Fix the compilation errors and find the output of following program
       ```
       #include<iostream.h>
       class Test
       {
       private:
       int x;
       public:
       Test(int x = 0) { this->x = x; }
       void change(Test *t) { this = t; }
       void print() { cout << "x = " << x << endl; }
       }
       void main()
       {
       Test obj(5);
       Test *ptr = new Test (10);
       obj.change(ptr);
       obj.print();
       }
       ```
   (c) Differentiate between OOP and POP.

S.Y. Diploma Sem-III: Paper Discussion Schedule

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<tr>
<td>Group</td>
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<td>10 a.m. to 11 a.m.</td>
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