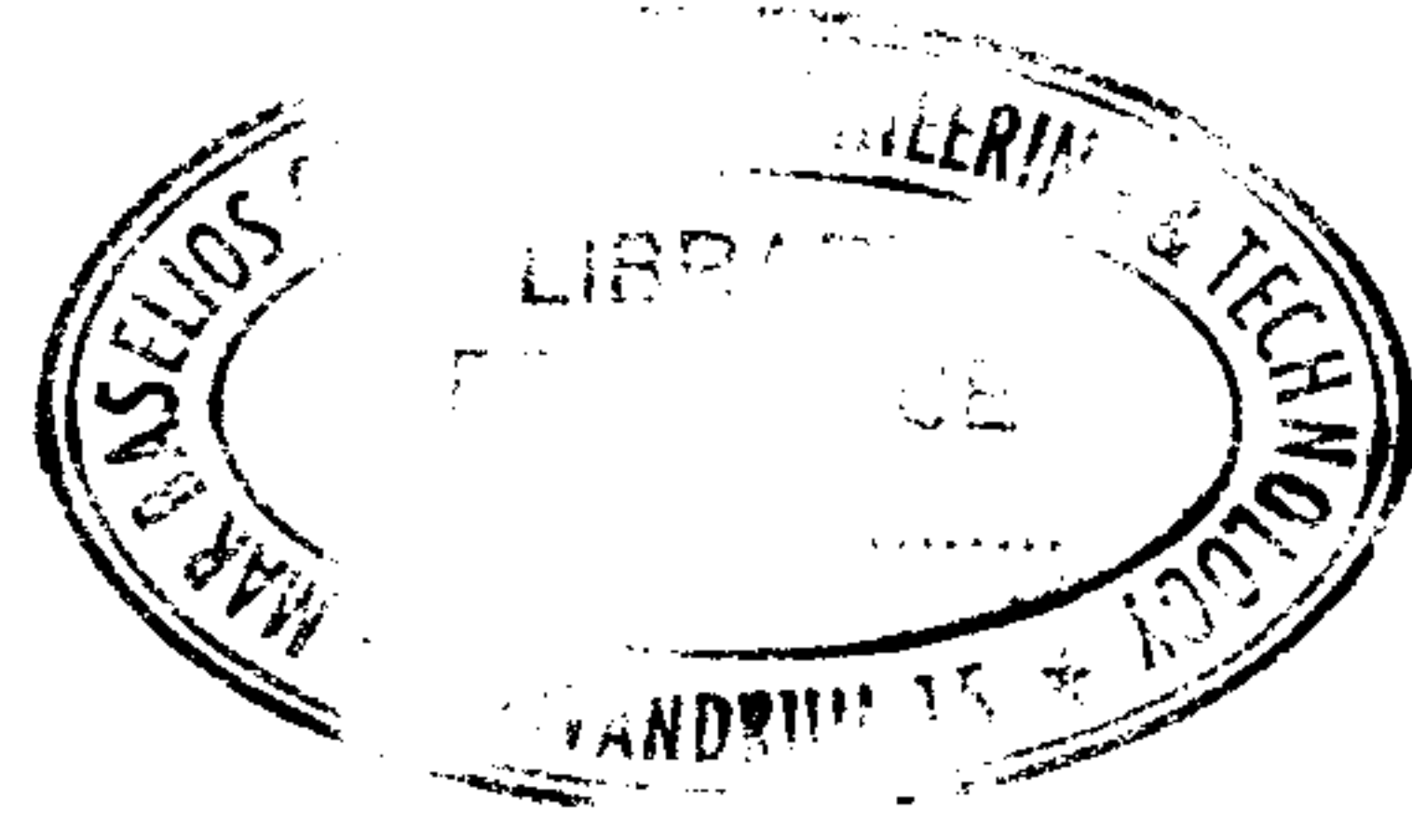




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3017

Reg. No. : .....

Name : .....

**Third Semester B.Tech. Degree Examination, April 2015  
(2013 Scheme)**

**13.305 : COMPUTER PROGRAMMING AND NUMERICAL METHODS  
(MP)**

Time : 3 Hours

Max. Marks : 100

**PART – A**

Answer **all** questions. **Each** question carry **4** marks.

**(10×4=40 Marks)**

1. List and explain the components of OOP. Also explain four characteristics of OOP.
2. Explain pre-increment and post increment operators with an example.
3. What are inline functions ? What are the limitations of inline functions ?
4. Explain function overloading.
5. What is meant by object initialization ?
6. Explain any two types of inheritance in C++.
7. Explain the use of public and private member functions.
8. Explain Lagrange interpolation of given set of data.
9. Explain how correlation is obtained from a given sets of data.
10. Explain Aitken interpolation technique.

P.T.O.

**PART – B**

Answer **any one** question from **each** Module. All question carry **equal** marks.

**(15×4=60)**

**Module – I**

11. a) Explain the keywords and identifiers in C++. What are different data types in C++ ?  
b) Explain different operators in C++.

OR

12. a) Explain the syntax of assignment, increment and decrement operators with example.  
b) Write the syntax of conditional operator. Write a program to check the maximum of three numbers using conditional operator.

**Module – II**

13. a) Explain the syntax of any four control statement in C++.  
b) Write a program to read two two-dimensional matrix and find the sum of the matrices.

OR

14. a) Explain call by value and call by reference in functions.  
b) Write a program to swap two integer values using call by reference in function.

**Module – III**

15. a) Explain the concept of inheritance with the help of suitable examples.  
b) Explain the use of friend function with suitable example.

OR

16. a) What is a constructor ? How is it defined and when is it called ?  
b) Explain how a class is initialized using suitable examples.
-



**Module – IV**

17. Use Lagrange's interpolation formulae to find  $y$ , when  $x = 5$ , from the following data.

<b>x :</b>	0	1	3	8
<b>y :</b>	1	3	13	123

OR

18. The following set of simultaneous equations was constructed from an electrical network. Solve the equations using Gauss-Jordan method to obtain the currents ( $i_1, i_2, \dots, i_5$ ).

$$i_1 + i_2 = 35$$

$$i_3 - i_4 - i_5 = 0$$

$$2i_4 - 3i_5 = 0$$

$$i_1 - i_2 - i_3 = 0$$

$$5i_2 - 7i_3 - 2i_4 = 0.$$

