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**End Semester Examination of Semester-III, 2015**

**Subject : COMPUTER SCIENCE (HONS)**

**Paper : VII (Theory) (UG)**

**Full Marks : 40**

**Time : 2 Hrs**

*The figures in the margin indicate the marks  
corresponding to the question*

*Candidates are requested to give their answers  
in their own word as far as practicable.*

*Illustrate the answers wherever necessary.*

**M1 : Object Oriented Programming using C++**

**Group A**

Answer any five questions:

5×2=10

1. a) Define Destructor in C++.
- b) What is Inline function in C++?
- c) Explain virtual base class.
- d) What is parameterized constructor.
- e) What do you mean by inheritance?
- f) Define public and protected keyword in C++
- g) What is Encapsulation in C++?

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**Group B**

Answer any one question : 1x10=10

2. a) Explain polymorphism with proper example. 5  
b) Explain virtual function in C++ with proper example. 5
3. a) Why destructor is necessary. 2  
b) Classification of inheritance explain each with suitable example. 6  
c) What do you mean by command line argument? 2

**Group C**

Answer any one question : 1x5=5

4. a) Briefly explain how exception work in C++. 5  
b) Explain how unary operator can be over loaded. 5

**M2 : Numerical Analysis**

**Group D**

5. Answer any three : 5x3=15
  - a) Derive the Lagrang's interpolation Polynomial.
  - b) Solve the equation  $3x - \cos x - 1 = 0$  using Newton Raphson method.

( 3 )

- c) Solve the following system of equations using Gauss-Seidal method

$$3x + y + z = 3$$

$$2x + y + 5z = 5$$

$$x + 4y + z = 2$$

- d) Use finite difference method to find the values of a and b in the following Table

x	0	2	4	6	8	10
f(x)	-5	a	8	b	20	32

- e) Derive the general quadrature formula based on Newton's Forward interpolation.
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