



Reg. No. :

Name :

**Fourth Semester B.Tech. Degree Examination, May 2013
(2008 Scheme)**

Branch : MECHANICAL ENGINEERING

08.402 : Computer Programming and Numerical Methods (MNPU)

Time : 3 Hours

Max. Marks : 100

Instruction : Answer *all* questions from Part A and *any one* full question from *each* Module from Part B.

PART – A



1. Give the applications of void data type in C++.
2. What are the methods of declaring constants in C++ ?
3. Explain the benefits of OOP.
4. Explain some of the common symbols used in flow charting.
5. Differentiate between local and global objects.
6. Explain the memory allocation for class members.
7. Explain friend functions.
8. List the differences in overloading an operator using
 - a) member function
 - b) friend function.
9. Explain floating point arithmetic.
10. What are inherent errors ? How do they arise ? **(10×4=40 Marks)**



PART – B

Module – I

11. a) List the commonly used input functions with the istream class object 'cin' and explain their applications.
 b) Explain the working of switch ()-case statement.

OR

12. a) Write a program to calculate the area of different geometric shapes using overloaded function area ().
 b) Write a program to enter two matrices and display their product matrix.

Module – II

13. a) What is a copy constructor ? Explain its working with the aid of a suitable example.
 b) Write a program to overload the increment operator using friend function.

OR

14. a) Differentiate between private and protected inheritance with the aid of suitable examples.
 b) Write a program to write the contents of one file in reverse into another file.

Module – III

15. Fit a geometric curve $y = ax^b$ to fit the following data :

x	-2	-1	0	1	2	3	4
y	38	6	0	-5	-41	130	300

Find y at $x = 1.5$ and $x = 3.25$.

OR

16. a) Calculate the value of $f(x)$ at $x = 1.35$ using Newton's divided difference method given the data :

x	1.2	1.3	1.4	1.5
f(x)	1.063	1.091	1.119	1.145

- b) Write a C++ program to implement the procedure in the above problem.

(3×20=60 Marks)