Fourth Semester B. Tech Degree Examination

(2013 Scheme)

13.405 COMPUTER PROGRAMMING (T)

(Model Question Paper)

Time: 3 hours Maximum marks: 100

PART–A

(Answer **all** questions)

1. List two differences between inline functions and macros. **(10x2 = 20)**
2. What is the difference between the following two pointer declarations?
   int * const ptr;
   const int * ptr;
3. What is the basic difference between arrays and linked lists?
4. What is this pointer?
5. When is the control variable in a for-loop declared before the loop rather than within its control initialization?
6. How is the concept of polymorphism implemented in C++?
7. Write a function that prints on screen the transpose of a matrix passed to it.
8. List out the different types of constructors.
9. What are the advantages and disadvantages of binary search over linear search?
10. What are exceptions? What is meant by exception handling?

PART–B

(Answer any **one full** question from each module. **Each** question carries **20** marks.)

Module I

11. a) Write a program that performs matrix multiplication using the following functions:- **(10)**
    - Read() – Reads a 2-D matrix from the user.
    - Print() – Prints a 2-D matrix on screen.
    - Mat_Mul() – Multiplies two matrices passed to it.

    b) Write a program that reads a line of text from the user and counts the number of words in it. **(10)**

12. a) Write a recursive function that returns the sum of the digits of a number passed to it. **(10)**

    b) Write a program to solve a quadratic equation ($ax^2+bx+c=0$). Read the coefficients **a**, **b** and **c** from the user. **(10)**

Module II

13. a) Explain new and delete operators used for dynamic memory management with examples. **(10)**