

C 15231

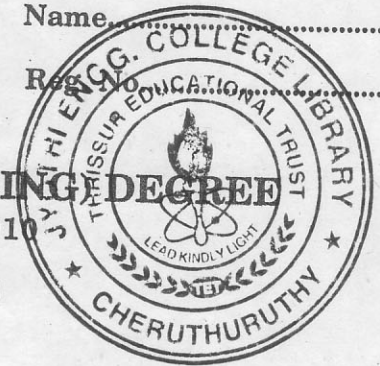
Name.....

Reg. No.....

**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE**  
**EXAMINATION, DECEMBER 2010**

IT 04 405 – PROGRAMMING PARADIGMS

(2004 Admissions)



Time : Three Hours

Maximum : 100 Marks

- I. (a) Draw the parse tree for the arithmetic expression  $3 * 4 + 5 * 6 + 7$ .  
(b) Show how to imitate a while -statement in C with a for statement.  
(c) Describe the difference between inheritance and overloading.  
(d) Explain the two uses of private in C++.  
(e) List any *five* operations on lists.  
(f) Write the syntax used to define recursive and non-recursive functions with lists.  
(g) What is unification? How does prolog use unification?  
(h) What is livelock? When does it occur?

(8 × 5 = 40 marks)

- II. (a) Explain the different expression notations used in programming languages.

Or

- (b) Explain the various parameter-passing methods.

- III. (a) Explain class declarations in C++.

Or

- (b) (i) Explain how C++ objects allocated.  
(ii) Explain how heap-allocated objects deallocated.

- IV. (a) Write notes on the following terms with respect to functional programming :  
(i) Type inference ; (ii) Coercion ; (iii) Polymorphism ; (iv) Overloading ;  
(v) Type names and type equivalence.

Or

- (b) Explain the different approaches to expression evaluation in functional programming.

- V. (a) Write notes on the data structures in Prolog.

Or

- (b) Explain the concept of synchronized access to shared variables in concurrent programming.

(4 × 15 = 60 marks)