

**C 32268**

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Name.....

Reg. No.....

**FIFTH SEMESTER B.Tech. (ENGINEERING) DEGREE  
EXAMINATION, JUNE 2007****CS 04 505—PROGRAMMING PARADIGMS**

(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.***Part A**

1. (a) Write brief notes on various benefits of high level languages.
- (b) What are pointers ? How do they facilitate in dynamic memory allocation ?
- (c) What are modules ? How are they useful in program design ?
- (d) What is inheritance ?
- (e) How functions are declared and used in a functional language ? Give example.
- (f) What are Higher-order functions ? Give an example.
- (g) What is logic programming ?
- (h) What is a pipe constructors ?

(8 × 5 = 40 marks)

**Part B**

2. (a) Rewrite the following expressions in prefix and postfix notations :—

- (i)  $a * b + c.$
- (ii)  $a * (b + c).$
- (iii)  $a * b + c * d.$
- (iv)  $a * (b + c) * d.$

Also draw abstract syntax trees for the above expressions.

*Or*

- (b) Explain in detail about control flow constructs and how looping constructs can be handled with examples.
3. (a) Explain how the base and derived classes provide information hiding feature of object-oriented programming.

*Or*

- (b) Illustrate how class are declared and objects are defined and used in C++ with example.

**Turn over**

4. (a) Discuss in detail about storage allocation for lists.

Or

- (b) Explain the features of functional programming languages with examples from any *one* language of your choice.

5. (a) What is a cut ? How it makes the computation more efficient ? What are the programming applications of cut ?

Or

- (b) Given  $n > 0$  processes with critical sections, use semaphores to allow any  $k$  of them,  $0 < k < n$ , to simultaneously execute their critical sections using generalized semaphores and binary semaphores.

(4 × 15 = 60 marks)