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Name.....

Reg. No.....



**FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION
DECEMBER 2008**

CS 04 505—PROGRAMMING PARADIGMS

(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

- I. (a) Compare compilation and interpretation.
(b) What is meant by structural equivalence of two type expressions ? Explain.
(c) Explain the use of a friend class.
(d) What is a virtual function ? Explain its use.
(e) Define List type and operations on list.
(f) What are association lists ? Explain.
(g) What is a cut in prolog ? Explain its uses.
(h) What is serializability criterion ? Explain.

(8 × 5 = 40 marks)

- II. A (i) Give a single program fragment that produces different results under each of the following parameter passing methods :
- (a) Call-by-value.
 - (b) Call-by-reference.
 - (c) Call-by-value-result.
 - (d) Call-by-name.

(8 marks)

- (ii) What are variant records ? Explain layout of variant records.

(7 marks)

Or

- B (i) What is a pointer type ? Explain the following :

- (a) Dangling pointers.
- (b) Pointers as proxies.
- (c) Rearranging pointers.

(7 marks)

- (ii) Explain the grammar for arithmetic expressions. Discuss the influence of associativity and precedence on the design of grammars for expressions.

(8 marks)

Turn over

- III. A (i) Using an example, explain dynamic allocation in C++. (7 marks)
 (ii) Define a class list and write its basic methods. (8 marks)
- Or
- B (i) What is implementation sharing? Explain using an example. (7 marks)
 (ii) What is the concept "inheritance". Write C++ code to explain the above concept. (8 marks)
- IV. A (i) Describe different approaches to expression evaluation. (8 marks)
 (ii) Explain the following concepts with respect to functional programming. (7 marks)
- (a) Values. (b) Types.
 (c) Names. (d) Functions.
- Or
- B (i) What are quilts? Explain basic operations in little quilt. (7 marks)
 (ii) What is a list? Explain major operations possible on lists in lisp. (8 marks)
- V. A Discuss the methods for synchronized access to shared variables. (15 marks)
- Or
- B Discuss the features of prolog. (15 marks)
- [4 × 15 = 60 marks]