

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

IT 04 405—PROGRAMMING PARADIGMS

(2004 Admissions)

Time : Three Hours

Maximum : 100 Marks

Answer all questions.

Part A

1. Distinguish between infix, prefix, and postfix notations.
2. Write the let-expression and explain the methods for specifying its semantics.
3. Draw flow diagram for the repeat until statement and while do statement.
4. Explain the elements of an activation record.
5. Explain the use of nested procedures.
6. With suitable examples explain the append and reverse functions on lists.
7. Draw prolog search trees for the query.

? reverse ([a, b, c, d], w)

where reverse is define by the rule

reverse ([], []),

reverse ([A, X], Z) :— reverse (X, Y), append (Y, [A] Z).

8. Explain deadlock with examples.

(8 × 5 = 40 marks)

Part B

9. (a) Explain the evolution of programming languages.
Or
(b) Write short notes on :
(i) BNF ;
(ii) Extended BNF ;
(iii) Syntax charts.
10. (a) What is information hiding ? Explain its motivation and implementation with suitable examples.

Or

- (b) (i) Distinguish between a base class and a derived class.
(ii) How are function body executed in response to function calls in C++ ?

Turn over

11. (a) Explain the different approaches to expression evaluation in a functional programming.

Or

(b) What is a list? Give examples of lists and explain the various operations on lists.

12. (a) What is unification? Explain with example computation in prolog is based on unification.

Or

(b) Explain the different solution to the producer-consumer problem.

Time : Three Hours
(4 × 15 = 60 marks)

Answer all questions.

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6. With suitable examples explain the append and reverse functions on lists.
7. Draw prolog search trees for the query.
reverse([a, b, c, d], w) where reverse is defined by the rule
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Part B

9. (a) Explain the evolution of programming languages.

Or

(b) Write short notes on :

- (i) BNF ;
- (ii) Extended BNF ;
- (iii) Syntax charts.

10. (a) What is information hiding? Explain its motivation and implementation with suitable examples.

Or

(b) (i) Distinguish between a base class and a derived class.

(ii) How are function body executed in response to function calls in C++? Turn over