

C 58257

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Name.....

Reg. No.....



**FOURTH SEMESTER B.TECH. (ENGINEERING)
DEGREE EXAMINATION, JUNE 2009**

IT 2K 404 – PROGRAMMING LANGUAGE CONCEPTS

Time : Three Hours

Maximum : 100 Marks

- I. (a) What is context free grammar? Give examples.
(b) Explain structured programming? What is the need for structured programming?
(c) What is the role of information hiding in program implementation?
(d) Explain the importance of object oriented programming.
(e) With example, explain the storage allocation of cells.
(f) Explain the functions on lists.
(g) Differentiate between unification and substitutions.
(h) What is deadlock? How it can be prevented?

(8 × 5 = 40 marks)

- II. (a) Discuss various parameter passing methods in a programming language. Explain with examples in C.

(15 marks)

Or

- (b) Describe how you would construct an EBNF grammar from a syntax chart. (7 marks)

- (c) Draw abstract syntax tree for the following expressions:

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

(8 marks)

- III. (a) Explain types of inheritance in an object oriented program.

(8 marks)

- (b) Discuss how objects can be created in C++.

(7 marks)

Or

- (c) Discuss the use of virtual functions in C++.

(7 marks)

- (d) How are structures and classes differ in C++.

(8 marks)

- IV. (a) Write short notes on:

- (i) Garbage collection.
(ii) Coercion.
(iii) Short circuit Evaluation.

(15 marks)

Or

Turn over

(b) With suitable examples, explain the use of map, remove if and reduce functions.

(15 marks)

V. (a) Discuss the two kinds of corrections issues raises during concurrent execution.

(15 marks)

Or

(b) Explain various ways of implementing parallelism in hardware.

(7 marks)

(c) Explain Back tracking and unification with examples.

(8 marks)

[4 × 15 = 60 marks]