4E 2916

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B. Tech. IV Semester Examination 2012
Computer Science Engineering
4CS2 Principles of Programming Language

Time : 3 Hours

Maximum Marks : 80
Min. Passing Marks : 24

Instructions to Candidates:

*Attempt any **five** questions. Selecting **one** question from **each** unit. All questions carry **equal** marks. (Schematic diagrams must be shown wherever necessary. Any data you feel missing may suitably be assumed and stated clearly). Units of quantities used/calculated must be stated Clearly.*

Unit - I

1. a) Why it is useful for a programmer to have some background in language design, even though he or she may never actually design a programming language? **(8)**

   b) Differentiate between syntax and semantics giving proper examples? **(8)**

OR

1. Write a short note on : **(16)**

   a) Declarative programming?

   b) Procedural programming?

   c) Functional programming?

   d) Object oriented programming?

Unit - II

2. Discuss the problem of garbage, dangling references and fragmentation that results with each of these possible implementation of "new" and "dispose"? **(16)**

OR

2. a) Distinguish between static type checking and dynamic type checking? **(8)**

   b) Explain the difference between vectors and arrays. How they are implemented in memory? **(8)**

Unit - III

3. What are the four problems associated with evaluation of tree representation of expressions? (16)

OR

3. a) How the recursive sub - programs are implemented? (8)

   b) Explain the various structured sequence control? (8)

Unit - IV

4. Explain : (4+6+6)

   i) Subprograms

   ii) Local and static scope of shared data

   iii) Dynamic and static scope of shared data.

OR

4. a) What are the problems that occur due to dynamic scoping? (8)

   b) What are the attributes of data control? (8)

Unit - V

5. a) Differentiate between stack and heap based storage management with taking every aspect of management and give examples of languages? (12)

   b) Define abstract data types? (4)

OR

5. a) Explain first fit and best fit method for free space allocation? (8)

   b) What are the three ways to recover unused memory? (8)

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