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1795

Your Roll No.

B.Sc. (H) Computer Science / IV Sem. A
Paper 403 : PROGRAMMING PARADIGMS
(Admissions of 2001 and onwards)

Time : 3 Hours

Maximum Marks : 75

*(Write your Roll No. on the top immediately
on receipt of this question paper.)*

Attempt all questions.

Parts of a question must be answered together.

1. (a) Enumerate characteristics that should be taken care of while designing a language for an embedded system. 2
- (b) When is a language said to be orthogonal ? 2
- (c) Explain the various language paradigms that describe most of the programming languages today. 4

2. Differentiate between :
 - (a) Language implementation time binding and Language definition time binding. 3

[P.T.O.]

- (b) What do you mean by virtual computers ? 2
3. (a) What is an ambiguous grammar ? Explain with a suitable example. 3
- (b) Explain the different functions performed by the semantic analyser. 4
- (c) What are the operations that can be performed on lambda expressions ? 2
4. (a) Differentiate between dynamic type checking and static type checking. 3
- (b) How is a file different from other data structures ? How is an indexed sequential file different from direct access file ? 4
5. (a) Discuss array slices with help of an example. 3
- (b) What do you mean by name equivalence and structural equivalence. 2
- (c) Explain linked storage representation and sequential storage representation. 3
6. (a) What do you mean by direct and indirect encapsulation ? 3

- (b) What is abstraction ? Explain various abstraction concepts. 4
- (c) What are prime programs ? 2
7. (a) Explain any four methods of parameter transmission. 4
- (b) Discuss the implementation of simple call return subprograms using CIP and CEP. 4
- (c) Explain various phases in storage management. 4
8. (a) Write the PROLOG clauses to delete all the occurrences of an item from a list. 3
- (b) How do cuts help in avoiding unnecessary back tracking ? Explain with an example. 3
- (c) Given the following facts and rules : 2
- possible – pair (X, Y) : – boy (X), girl (Y).
- boy (john).
- boy (russel).
- girl (mary).
- girl (julie).
- What is the result of query possible-pair (X, Y) ?

9. (a) How exceptions are raised and handled in ML. 3
- (b) What is the purpose of map function ? Explain. 1
- (c) Assuming a list L = (it (seem that) you (enjoy) reading)
- What will the output of the following : 2
- (i) (Car (Cdr L))
- (ii) (Cdr (Cdr L))
- (d) Write a function in LISP to add two numbers. 3