



MANIPAL INSTITUTE OF TECHNOLOGY
(Constituent Institute of MAHE- Deemed University)
MANIPAL-576104



V SEMESTER B.E. (CSE)
MAKEUP EXAMINATION JANUARY - 2007
SUBJECT: PRINCIPLES OF PROGRAMMING LANGUAGES

TIME : 3 HOUR

MAX.MARKS : 50

Answer any FIVE full questions.

1. (a) Explain the computational paradigms in Programming Languages. 4
1. (b) Briefly explain Regularity and its subdivisions. 3
1. (c) Given the following BNF:
expr \rightarrow (list) | a
list \rightarrow list, expr | expr
Write EBNF and syntax diagram for the above. 3
2. (a) Explain the specification, operations and the implementation of Vectors. 5
2. (b) Explain the specification and syntax of character strings and various operations performed on them. 5
3. (a) Explain the alias and dangling reference with example. 4
3. (b) The following program prints two integer values. The first value is typically garbage (or possible zero) but the second value might be two. Explain why?

```
#include<stdio.h>
void P(void)
{ int y;
  printf( "%d \n", y);
  y = 2; }
main()
{ P();
  P();
  Return o ; }
```

 2
3. (c) Explain loops and variations on while with examples. 4
4. (a) Explain the case-switch statement by giving an ada example. 2

- 4. (b) Explain inheritance in Java with suitable example. 3
- 4. (c) With an example, explain how dynamic binding is implemented in OOL. 3
- 4. (d) What is the difference between a type and a class? 2
- 5. (a) Explain with suitable example, how assignment is made in Scheme. 3
- 5. (b) Write a tail recursive function to reverse the list L. 2
- 5. (c) Explain with example the selector and constructor functions in Scheme. 3
- 5. (d) Write the prolog clauses for append and reverse. 2
- 6. (a) List the problems with logic programming and explain any two of them. 4
- 6. (b) Distinguish between C++ name spaces and Java packages. 3
- 6. (c) List the problems with ADT mechanisms and explain any two of them. 3

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