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Roll No.

CS-602

B. E. (Sixth Semester) EXAMINATION, June, 2012

(Computer Science & Engg. Branch)

PRINCIPLES OF PROGRAMMING LANGUAGES

(CS-602)

Time : Three Hours

Maximum Marks : 100

Minimum Pass Marks : 35

Note : Attempt *one* question from each Unit. All questions carry equal marks. Assume suitable data wherever necessary.

Unit - I

1. (a) Discuss syntax directed control flow. 10
(b) Construct language for the given grammar : 10

$S = a$

$S = aS$

$S = bS$

Draw parse tree for any string.

Or

2. (a) Explain Backus-Naus form briefly. 10
(b) Discuss the desirable features and design issues of programming languages. 10

P. T. O.

Unit-II

3. (a) What is data object ? What is life time of data object ?
Explain program and system defined data object. 10
- (b) Draw flow diagrams for the following program
fragment : 10

Loop

S1;

If E then exit end;

S2;

End.

Or

4. Explain the following terms with suitable examples : 20
- (a) Exception and Exception handler
- (b) Implicit and Explicit sequence control
- (c) Concurrent execution
- (d) Coercion

Unit-III

5. (a) What do you mean by current instruction pointer and
current environment pointer ? How is it used for
recursive subprograms ? 10
- (b) Explain scope, visibility and life time of variable. 10

Or

6. (a) Discuss the design issues for subprograms. 10
- (b) Define the following terms related to variables : 10
- (i) Life time
- (ii) Scope
- (iii) Static scope
- (iv) Dynamic scope

Unit - IV

7. (a) Define abstract data types. What are the language design issues regarding abstract data types ? 10
(b) Explain stack based and heap based storage management briefly. 10

Or

8. (a) Explain inheritance concept in C++ and Java with its advantages and disadvantages. 10
(b) What is monitors ? What are its advantages and disadvantages over semaphore ? 10

Unit - V

9. (a) Explain the use of predicate calculus in logic programming. 10
(b) Explain the following type of statements with respect to PROLOG : 10
(i) Fact statement
(ii) Rule statement
(iii) Goal statement

Or

10. Write short notes on the following : 20
(a) Exception propagation
(b) PROLOG
(c) Predicate calculus
(d) 4 GL

