R13

SET - 1

III B. Tech I Semester Supplementary Examinations, October/November - 2018
PRINCIPLES OF PROGRAMMING LANGUAGES
(Computer Science and Engineering)

Time: 3 hours   Max. Marks: 70

Note: 1. Question Paper consists of two parts (**Part-A** and **Part-B**)
2. Answering the question in **Part-A** is compulsory
3. Answer any **THREE** Questions from **Part-B**

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PART –A

1	a)	Define syntax and semantics of a language	[3M]
	b)	What mixed-mode assignments are allowed in C and Java?	[4M]
	c)	List the design issues for subprograms.	[4M]
	d)	Differentiate between statement level concurrency and subprogram level concurrency.	[4M]
	e)	Give the features of Scheme	[3M]
	f)	What are multi paradigm languages?	[4M]

PART -B

2 a) Briefly present milestones in the evolution of programming languages. [8M]

    b) Consider the grammar: [8M]
       $<assign> \rightarrow <id> = <expr>$
       $<id> \rightarrow A \mid B \mid C$
       $<expr> \rightarrow <id> + <expr> \mid <id> * <expr> \mid (<expr>) \mid <id>$
       Give parse tree and left most derivation for A = A * (B + (C * A)) and A = A * (B + (C)).

3 a) Write about static variables, stack dynamic variables and heap dynamic variables. [8M]
    b) Present the classification of arrays based on subscript binding. Give programming examples. [8M]

4 a) Discuss about pass-by-value and pass-by-name parameter passing methods, with a detailed programming example for each. [8M]
    b) What is an Activation Record Instance? Explain different parts of it and implementation in the case of a recursive factorial function. [8M]

5 a) Differentiate between procedural and object oriented languages. [8M]
    b) Discuss about exception handling in C++. [8M]

6 a) Write about data types and structures in Scheme. [8M]
    b) Discuss about function declarations and control statements in ML. [8M]

7 a) What is the purpose of predicate calculus? How it helps in theorem proving? [8M]
    b) List and explain the applications of logic programming. [8M]

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