

Code No: RT31053

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**

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]
 $\langle \text{assign} \rangle \rightarrow \langle \text{id} \rangle = \langle \text{expr} \rangle$
 $\langle \text{id} \rangle \rightarrow A \mid B \mid C$
 $\langle \text{expr} \rangle \rightarrow \langle \text{id} \rangle + \langle \text{expr} \rangle \mid \langle \text{id} \rangle * \langle \text{expr} \rangle \mid (\langle \text{expr} \rangle) \mid \langle \text{id} \rangle$
 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]
