

Paper Id: 

110503
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Roll No: 

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**B. TECH**  
**(SEM V) THEORY EXAMINATION 2019-20**  
**PRINCIPLES OF PROGRAMMING LANGUAGES**

**Time: 3 Hours****Total Marks: 70****Note: 1.** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt all questions in brief.** **2 x 7 = 14**
- (a) What are advantages and disadvantages of dynamic local variables?
  - (b) Explain a lambda expression.
  - (c) Explain about parsing.
  - (d) Define pass by result.
  - (e) Write any two design issues for arithmetic expressions.
  - (f) Explain fundamentals of functional programming language.
  - (g) What is an overriding method?

**SECTION B**

- 2. Attempt any three of the following:** **7 x 3 = 21**
- (a) Explain about static, fixed stack dynamic, fixed heap dynamic and dynamic arrays.
  - (b) Write notes on coercion expressions and short-circuit evaluation.
  - (c) Write differences between procedural and non-procedural languages.
  - (d) Discuss about language recognizers and language generators.
  - (e) What is an event? How the events are handled in various OOP languages.

**SECTION C**

- 3. Attempt any one part of the following:** **7 x 1 = 7**
- (a) Write notes on context free grammars. How to identify whether a grammar is unambiguous?
  - (b) Define name and structure type compatibility. What are relative merits of these two?
- 4. Attempt any one part of the following:** **7 x 1 = 7**
- (a) What mixed-mode assignments are allowed in C and Java?
  - (b) Explain various primitive data types with suitable examples.
- 5. Attempt any one part of the following:** **7 x 1 = 7**
- (a) Define a subprogram. Write the semantics of call and return of a subprogram.
  - (b) Explain in detail various design issues of character string types.
- 6. Attempt any one part of the following:** **7 x 1 = 7**
- (a) Explain how message passing helps in concurrency control? Explain with an example.
  - (b) Define monitor? Explain how cooperation synchronization and competition synchronization are implemented using monitors.
- 7. Attempt any one part of the following:** **7 x 1 = 7**
- (a) Write a prolog description of your family tree , going back to your grandparents and including all descendants. Be sure to include all relationships
  - (b) Explain in what ways ML is different from Scheme.