

Paper Id: **110503**

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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.