

Paper Id:

110503

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.