CCS358-Principles of Programming Language

Question Bank

UNIT - 1

Part:A

1. Why is it useful for a programmer to have some background in language design, even though he or she may never actually design a programming language
2. How can knowledge of programming language characteristics benefit the whole computing community?
3. What language was the first to support the three fundamental features of object-oriented programming
4. What are the three fundamental features of an object-oriented programming language
5. Define Syntax and Semantics.
6. Who are language descriptions for?
7. Describe the operation of a general language generator.
8. Describe the operation of a general language recognizer.
9. What is the difference between a sentence and a sentential form?
10. What the primary use of attribute grammars?
11. Describe the two levels of uses of operational semantics.
12. On what branch of math is axiomatic semantics based?
13. What is the use of the WP function? Why it is called a predicate transformer?
14. Give the difference between total correctness and partial correctness.
15. What are the design issues for names?
16. What is an Alias
17. . What is the l value of a variable?
18. What is the r value .What is Block
19. What are the advantages of named constant?
20. What is Bottom up parsing

Part: B

1. What are the formal methods of describing the syntax? Explain the Grammar.

2. What are the rules of EBNF. Explain in detail the advantage and disadvantage of EBNF .Compare the BNF with EBNF
3. Explain Dynamic semantics
4. What is Parsing problem? What are the two parsing algorithms What are the complexities of Parsing process
5. What is Lexical Analyzer .What are the approaches for building a lexical analyzer. Implement using an example using state diagram
6. Explain Attribute Grammar
7. Explain life time .What is Referencing environment
8. Explain Semantics .What are the various methods
9. What is recursive Parsing
10. What is bottom Parsing

UNIT - 2

Part:A

1. What are the advantages and disadvantages of decimal data types?
2. What are the design issues for character string types?
3. Describe the three string length option.
4. Describe ordinal, enumeration, and subrange types.
5. What are the advantages of user-defined enumeration types?
6. What are the design issues for arrays?
7. Define row major order and column major order.
8. Define fully qualified and elliptical references to fields in records.
9. Define union, free union and discriminated union.
10. What are the design issues for unions?
11. What is a compatible type?
12. Define type error.
13. Define strongly typed.
14. What is a ternary operator?
15. What is a prefix operator?
16. What operator usually has right associatively?

17. What is no associative operator?
18. What is a conditional expression?
19. What is short-circuiting evaluation?
20. What is cast?

Part: B

1. Explain briefly about scope and its lifetime
2. What is binding .How the variables are binded. What are the various methods of binding
3. Explain in detail the Pointers and References
4. Explain in detail the attribute grammar
5. Explain Arithmetic expression? Explain with example Relational and Boolean Expressions.
6. What is meant by data type ?What are the various Primitive Data type .Evaluate the various data types
7. Explain briefly about control Structures
8. Explain Overloaded Operators
9. What is Selection ?Explain various branching Statements
10. What are the various assignments statements

UNIT- 3

Part:A

1. What are the three general characteristics of subprograms?
2. What are formal parameters? What are actual parameters?
3. What are the differences between a function and a procedure?.
4. What are the design issues for subprograms?. What is an overloaded subprogram?
5. What is ad hoc binding?
6. What is multicast delegate?
7. What exactly is a delegate?
8. What is a closure?
9. Which of the caller or callee saves execution status information?
10. What is the task of a linker?

11. What is the difference between an activation record and an activation record instance?
12. What kind of machines often use registers to pass parameters?
13. What is an EP, and what is its purpose?
14. What are the issues of Subprogram
15. What is Local referencing
16. What is Global referencing
17. What are design issues of functions
18. What is Dynamic scoping
19. Write an example of call and return statements
20. What is Stack and dynamic local variables

Part: B

1. What is subprogram Explain with an example
2. What are the design issues of subprogram
3. What are the various parameter Passing methods Explain with an example
4. What is Overloaded methods .Explain the generic methods
5. Explain the design issues of functions
6. What is Semantic call .Explain
7. Implant the various subprogram
8. Explain stack and dynamic variables
9. Explain the nested subprograms
10. What is dynamic scoping

UNIT-4

Part:A

1. What are the two kinds of abstractions in programming language?
2. Define abstract data type.
3. What is the difference between private and limited private types in Ada?
4. What is the use of the Ada with clause?
5. What is the use of the Ada use clause?
6. What is the fundamental difference between a C++ class and an Ada package?
7. What is the purpose of a C++ destructor?
8. What are the legal return types of a destructor?

9. What are initializes in Objective-C?
10. What is the use of @private and @public directives?
11. Where are all Java methods defined?
12. What is a friend function? What is a friend class?
13. What is a C++ namespace, what is its purpose?
14. What is the advantage of inheritance?
15. What is message protocol?
16. What is an overriding method?\
17. What is dynamic dispatch?
18. From where are Smalltalk objects allocated?
19. What kind of inheritance, single or multiple, does Smalltalk support?.
20. How are C++ heap-allocated objects de allocated?.

Part: B

1. What are the design issues of OOP languages
2. Implement the oops constructor
3. Explain with an example Concurrency
4. Explain with an example about semaphores
5. Explain with an example monitors
6. Explain with an example about message passing
7. What is Thread explain
8. What are the various methods of Exception handling
9. What is State level concurrency
10. What is Event handling

Unit-5

Part:A

1. What data types were parts of the original LISP?.
2. Explain why QUOTE is needed for a parameter that is a data list.
3. What is a simple list?
4. -What does the abbreviation REPL stand for?

5. What are the two forms of DEFINE?
6. . Why are CAR and CDR so named?.
7. What is tail recursion? Why is it important to define functions that use recursion to specify repetition to be tail recursive?
8. -. Why were imperative features added to most dialects of LISP?
9. What is type inferencing, as used in ML?
10. -. What is a curried function?.
11. What does partial evaluation mean?
12. -. What is the use of the evaluation environment table?
13. - . Explain the process of currying.
14. How is the functional operator pipeline (|>) used in F#?
15. What is exception propagation in Ada?.
16. What is the scope of exception handlers in Ada
17. . What are the four exceptions defined in the Standard package of Ada?
18. . What is the use of Suppress pragma in Ada?-
19. . What is the name of all C++ exception handlers?
20. . What is the use of the assert statement?

Part: B

1. What is lamda? Describe briefly
2. Write the fundamentals of FP languages
3. Write a Program with scheme
4. Explain in brief about programming with ML
5. Describe Logic and Logic Programming
6. Explain Prolog
7. What are the Multi paradigm languages
8. Explain the various programming languages
9. Write a program in scheme
10. Write an program using prolog