

Code: 9A15403

II B. Tech II Semester (R09) Regular & Supplementary Examinations, April/May 2012

PRINCIPLES OF PROGRAMMING LANGUAGES

(Information Technology)

Time: 3 hours

Max Marks: 70

Answer any FIVE questions
All questions carry equal marks

- 1 Explain in detail, the reasons for studying the programming language concepts.
- 2
 - (a) Explain the concept of token of a language with an example.
 - (b) Distinguish between static and dynamic semantics.
- 3 What is life time of a variable? Explain 4 categories of variables according to their lifetimes.
- 4 What are design issues for arithmetic expressions? Clearly explain how precedence and associativity are used to specify operator evaluation order.
- 5
 - (a) Explain stack implementation of common parameter passing methods.
 - (b) Explain why parameter passing is more flexible than direct access to non local variable.
- 6 Explain abstract data types in C # with examples.
- 7
 - (a) Explain the applications of logic programming.
 - (b) Explain how backtracking work in prolog.
- 8
 - (a) Explain with suitable examples, the python procedural abstraction.
 - (b) Discuss in detail about the data abstraction using python.

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- 1 Explain in detail about language evaluation criteria.
- 2
 - (a) Explain three extensions which are common to most EBNFs.
 - (b) Write BNF and equivalent EBNF grammar for a given expression grammar.
- 3 Explain in detail about static type binding and dynamic type binding in various languages. What are the disadvantages of dynamic type binding?
- 4
 - (a) Explain different forms of statement level sequence control.
 - (b) Explain different conditional statements in C based languages.
- 5
 - (a) Explain parameter passing method of some major languages.
 - (b) Explain the concepts of overloaded subprograms.
- 6
 - (a) What is a C++ name space and what is its purpose?
 - (b) Explain how information hiding is provided in an Ada package.
 - (c) What is a java package and what is its purpose?
- 7 Explain in detail the basic elements of prolog.
- 8
 - (a) Discuss in detail about the python procedure with dynamic typing.
 - (b) Write a python procedure to print the date in ISO format using tuples.

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- 1 What is a compiler explain? Explain in detail about compilation process.
- 2 Clearly explain how axiomatic semantics are used to describe the meaning of programs.
- 3 What is a variable? Explain in detailed different characteristics of a variable.
- 4 (a) What is the role of parentheses with relate to precedence of operators?
(b) Explain conditional expression of C language.
- 5 (a) Discuss how parameter- passing techniques are implemented.
(b) Explain how multi-dimensional arrays are passed as parameters.
- 6 Explain in detail abstract data types in java with examples.
- 7 (a) What are different classes of exceptions in java?
(b) Explain with suitable example finally clause in java.
- 8 (a) Give brief description about python tuples, lists and dictionaries.
(b) Explain with examples, the python iterative commands.

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- 1 (a) What are the factors that influence programming language design?
(b) What is exceptional handling? Explain with example.
- 2 Clearly explain how operational semantics are used to describing the meaning of programs.
- 3 (a) Explain type inference of ML language.
(b) Explain dynamic type binding.
- 4 Explain in detail about the implementation of arithmetic, relational and Boolean expressions in a programming language.
- 5 (a) Explain pass-by-value and pass-by-result parameter passing techniques.
(b) Explain design issues for functions.
- 6 Explain in detail abstract data types in C++ with examples.
- 7 (a) Explain the list structures of prolog.
(b) What are the forms of horn clauses?
(c) What are the general forms of a proposition in casual form?
- 8 (a) Explain in detail about the characteristics of scripting languages.
(b) Discuss in detail about the python primitive types.
