A

MCA DEGREE III SEMESTER EXAMINATION NOVEMBER 2015

CAS 2302 PRINCIPLES OF PROGRAMMING LANGUAGES
(*Regular*)

Time: 3 Hours   Maximum Marks: 50

PART A
(Answer *ALL* questions)

$(15 \times 2 = 30)$

I.   (a)   What does semantics mean? Explain formal methods of describing semantics of a language.
     (b)   Differentiate between syntax and semantics of a language.
     (c)   Briefly discuss on attribute grammar.

II. (a)   Explain how binding of variables take place.
     (b)   What does scope of a variable mean? Give example.
     (c)   What are referencing environments?

III. (a)   Define data abstraction.
     (b)   What is code reusability?
     (c)   What is exception? How does it affect the working of software?

IV. (a)   How are control flow and assignment handled in functional languages?
     (b)   Describe Lambda calculus.
     (c)   What is the use of LISP?

V.   (a)   What is preposition?
     (b)   What is the use of prolog and where is it used?
     (c)   Describe resolution and unification.

PART B

$(5 \times 4 = 20)$

VI.   Compare functional programming and logic programming.
                                    OR
VII.   Explain in detail object oriented programming paradigm.

VIII.   How are parameters passed to subprograms? Explain in detail.
                                    OR
IX.   Explain the following terms.
              (i)   Named constants
              (ii)   Coroutines
              (iii) Variable initializations

X.   Write down the features of object oriented languages.
                                    OR
XI.   Briefly explain smalltalk.

XII.   Discuss on the application of functional programming languages.
                                    OR
XIII.   Briefly explain the programming language LISP.

XIV.   Describe the following.
              (i)   Predicate calculus
              (ii)   Horn clauses

                                    OR
XV.   How is prolog used in logic programming?

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