Roll No .....

CS - 602

B.E. VI Semester

Examination, June 2015

Principles of Programming Languages

Time : Three Hours

Maximum Marks : 70

Note: i) Answer five questions. In each question part A, B, C is compulsory and D part has internal choice.

ii) All parts of each questions are to be attempted at one place.

iii) All questions carry equal marks, out of which part A and B (Max.50 words) carry 2 marks, part C (Max.100 words) carry 3 marks, part D (Max.400 words) carry 7 marks.

iv) Except numericals, Derivation, Design and Drawing etc.

Unit-I

1. a) Explain general syntactic criteria.

   b) Why do we study programming language concepts.

   c) Explain the concept of virtual computer with a suitable example.

   d) What are the different factor that influence the evolution of programming languages?

   OR

   Explain in detail different stages in language translation.

Unit-II

2. a) Differentiate between compile time binding and run time binding.

   b) Define the term dangling pointer?

Unit-V

5. a) Write down the use of predicate calculus in logic programming?

   b) Explain exception handling? Give example.

   c) Discuss the features of Prolog.

   d) Explain various forms of expression evaluation used in functional programming?

   OR

   Briefly describe the process of resolution in logic programming.

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c) Define sequence control and its types. What are recursive subprogram.

d) For an elementary data type in a language with which you are familiar, do the following:

i) Show a situation during execution where a data object of that type exists that is neither a variable nor a constant.

ii) Explain the difference between data objects of that type and the values that those data objects may contain.

OR

Explain the problems caused by Uniform evaluation rule while evaluating an expression and the solution to the problem.

Unit-III

3. a) Explain the difference between procedure and function with suitable example.

b) What is referencing environment? Write its various components?

c) What is parameter passing and what are actual and formal parameters?

d) Differentiate between call by reference and call by value result parameter passing mechanism. What will be the output of following program that parameter passing is

i) Call by value

ii) Call by reference

iii) Call by value result


```
Procedure P(x,y,z)
begin y: = y+1;
      z = z+x;
      end;
begin a : = 2;
      b: = 3;
      P(a+b, a, a) ;
      print(a);
      end.
```

OR

Write short notes:

i) Generic subprograms

ii) Overloaded operators

iii) Co-routines

iv) Dynamic scope rule

Unit-IV

4. a) What is the need of abstraction?

b) Explain the concept of interface and delegates in C#.

c) What is a monitor? What are its advantages and disadvantages over semaphores?

d) Explain briefly:

i) Static storage management

ii) Heap based storage management

OR

What are C# threads? Give the steps that demonstrate how to create a thread in C#. Also discuss the various states of thread in C#.