Seat
No.

T.E. (Computer) (Semester – II) Examination, 2014
PRINCIPLES OF PROGRAMMING LANGUAGES
(2008 Course)

Time : 3 Hours   Max. Marks : 100

***Instructions** : 1) Answer **any 3** questions from **each** Section.*
*2) Answers to the **two** Sections should be written in **separate** books.*
*3) **Neat** diagrams must be drawn **wherever** necessary.*
*4) Black figures to the **right** indicate **full** marks.*
*5) Assume suitable data, if **necessary**.*

SECTION – I

1. a) Explain in detail following characteristics of a good programming language
   1) Orthogonality   2) Uniformity   3) Implementability
   4) Readability   5) Writability.   **10**

   b) Explain with suitable example implicit and explicit type conversions.   **8**

                                           OR

2. a) Explain programming language paradigm in detail.   **8**

   b) What do you mean by Bottom up and Top-down programming approach ? Explain with
      help of example.   **8**

   c) Explain term binding in short.   **2**

3. a) What are the benefits and limitations of procedural programming language.   **8**

   b) Explain the basic elements of PASCAL programming language.   **8**

                                           OR

4. a) What is the use of local and global variables ? Explain with example.   **4**

   b) Compare C with PASCAL programming language.   **6**

   c) Explain with example the concept of referencing environment.   **6**

5. a) Define Java Package. How to create user defined package ? Explain with suitable code
      how to implement package with its compilation and execution.   **8**

   b) Compare different features of C++ with Java.   **8**

                                           OR

6. a) Compare abstract base class and interface in Java.   **4**

   b) Explain Multithreading concept with respect to Java.   **8**

   c) Explain the use of 'instance of' operator.   **4**

SECTION – II

7. a) What is a need of a framework ? Draw and explain in brief various components of .NET framework. **8**

    b) What is event handler ? How it is designed ? **6**

    c) Compare C# with Java. **4**

OR

8. a) Explain following object oriented concepts of .NET class object with suitable example **8**
    1) Finalizers
    2) Idisposable
    3) Delegates
    4) Events.

    b) Describe the following significant features supported by C# language. **8**
    1) Strong data typing
    2) Name space.

    c) What is assembly and delegates in C# ? **2**

9. a) Explain how backtracking works in Prolog. **8**

    b) Explain resolution and unification in logic programming with suitable example. **8**

OR

10. a) Consider following prolog database of cities and respective states. **8**

    Location (Ahmedabad, Gujrath)

    Location (Pune, Maharashtra)

    Location (Nagpur, Maharashtra)

    Location (Mysore, Karnataka)

    Answer the following queries based on above data base.
    1) Specify goal to list all states
    2) Specify goal to find the state of Mysore city.

    b) Explain following conditional predicates with Prolog. **8**
    i) CUT
    ii) If then else.

11. a) Consider List L = (A, B, C). Write the output of following **4**
    i) (caar L)
    ii) (cddr L)
    iii) (car(cdr(cdrL))).

    b) State various LISP data types. **4**

    c) Compare functional and imperative language with respect to following issues   **8**
       1) Syntactic structure
       2) Semantics
       3) Concurrent execution
       4) Data structure.
             OR

12. a) Write a LISP function to concatenate two lists.   **6**

    b) Consider   **4**

        X = (a, b, c, d, e)

        Y = Reverse of X. Write output of
     i) (cadddr X)
     ii) (n^{th} 2(cdr X))
     iii) (append Y X)
     iv) (length(append X(n^{th} 2 (cdr X))))

    c) Explain numeric predicate function in LISP.   **6**

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