[4658] – 166

Seat
No.

T.E. (IT) (Semester – II) Examination, 2014
PROGRAMMING PARADIGMS
(2008 Pattern)

Time : 3 Hours   Max. Marks : 100

Instructions : 1) Answers to the **two** sections should be written in **separate** answer
books.
2) Answer **any three** questions from **each** Section.
3) Neat diagrams must be drawn **wherever** necessary.
4) Figures to the **right** side indicate full marks.
5) Use of calculator is **allowed**.
6) Assume suitable data if necessary.

SECTION – I

1. a) What is data object ? What is life time of data object ? Explain programmer and system
defined data object.   **10**

   b) What is type checking ? What is static and dynamic type checking ? Explain the concepts
of type conversions and coercions ?   **8**

   OR

2. a) State and explain the importance of learning programming languages.   **10**

   b) What is binding and binding names ? What are the different binding times ?   **8**

3. a) Explain with example the content of code segment and Activation record at run time.   **8**

   b) Compare the programming language 'C' and PASCAL with respect to   **8**
      1) Subprogram declaration
      2) Subprogram invocation
      3) Variable declaration
      4) Control loops

   OR

4. a) What do you mean by activation records ? How this feature is used for implementing
recursive function calls ?   **8**

   b) What do you mean by exception ? Explain its use with example.   **8**

5. a) What is AWT ? Explain Applet life cycle.   **8**

   b) Explain following variables supported by Java with example.   **8**
      i) Instance variable   ii) Static variable
      iii) Local variable   iv) Parameter variable

   OR

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6. a) Explain the concept of inheritance. What are different types of inheritance supported in C++ and Java ? **8**

   b) Explain the following concept in Java.
   i) Panel   ii) Frame   iii) Canvas   iv) Container   **8**

SECTION – II

7. a) Consider the following PROLOG database of cities and respective states **10**
   Location (Banglore, Karnataka)
   Location (Mumbai, Maharashtra)
   Location (Pune, Maharashtra)
   Location (Surat, Gujrat)
   Location (Hyderabad, AP)

   Answer the following queries
   a) Specify GOAL to list all cities
   b) Specify GOAL to find the state of Pune city.

   b) What is declarative programming paradigm ? How it is different than imperative paradigm ? **8**

OR

8. a) Write a short note on Lambda calculus. **5**

   b) Write the mathematical properties of functional programming language. **5**

   c) What is Unification and Resolution ? Why these are important in Logic programming ? **8**

9. a) What are the design issues for language support for concurrency ? **8**

   b) What is meant by parallel programming ? What are the design principles for parallel programming. **8**

OR

10. a) State the different Synchronization mechanisms of parallel programming language. Explain any two. **8**

   b) Enlist and explain the eight socket primitives required for network connection. **8**

11. a) What are the design principles of windows programming ? **8**

   b) Explain design principles data flow programming and note firing schemes used in data flow computation. **8**

OR

12. a) Explain various types of data types and data structures supported by LISP. **8**

   b) How we can handle synchronization mechanism in parallel programming ? **6**

   c) What is the concept of node in Data Flow Programming ? **2**

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