

Total No. of Questions : 12]

SEAT No. :

P2346

[4758] - 84

[Total No. of Pages :3

T.E. (Computer Engg.)

PRINCIPLES OF PROGRAMMING LANGUAGES

(2008 Pattern) (Semester - II) (310249)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates:

- 1) *Answer any three questions from each section.*
- 2) *Neat diagrams must be drawn wherever necessary.*
- 3) *Figures to the right side indicate full marks.*
- 4) *Assume suitable data if necessary.*

SECTION - I

- Q1) a)** What are the characteristics of good programming language. [8]
- b) Explain data objects, variables and constants with the help of example. What do you mean by data object binding? [8]

OR

- Q2) a)** How data types are classified? Explain in brief structure data type. [8]
- b) Explain how swapping of two numbers using call by reference is done. [8]

- Q3) a)** Explain the basic elements of PASCAL programming language. [8]
- b) Write suitable example demonstrate how nested procedures and functions acts as a efficient program design construct? [8]

OR

- Q4) a)** What is the use of local and global variable in a program? With the help of sample 'C' program explain the concept. [8]
- b) With the help of suitable example discuss the function and procedures in PASCAL. [8]

P.T.O.

- Q5)** a) Explain different access mechanism in Java. [8]
- b) What do you mean by multithreading. With the help of suitable example explain with respect to Java. [10]

OR

- Q6)** a) Differentiate Swing and AWT. State any 2 functions of each. [8]
- b) Write short notes on [10]
- i) JDBC
 - ii) Inheritance
 - iii) Exception handling
 - iv) Java Packages

SECTION - II

- Q7)** a) Explain in brief advantages and disadvantages of .NET framework with respective Java. [8]
- b) Explain value type and reference type variable with respect to C#. [6]
- c) Describe the structure of C# program. [4]

OR

- Q8)** a) Explain early binding and late binding with example. [6]
- b) What is Microsoft .NET technology? What are web services and their importance from business perspective? List web services protocols supported by industry. [10]
- c) Explain significance of Namespaces with respect to C#. [2]

- Q9)** a) What are different searching techniques supported by logic programming. [8]
- b) Why recursions are so naturally applies to defining relations in PROLOG? Justify with suitable example. [4]
- c) Write a short note on Prolog facilities and deficiencies. [4]

OR

- Q10)**a) Describe the control structure of Prolog with example. [6]
- b) List applications of Logic programming. [4]
- c) How resolution and unification algorithm works to match the proper pair in database to achieve the goal? Explain with suitable example. [6]

- Q11)**a) Write short note on Free and Bound identifiers support with respect to Lambda calculus. [6]

- b) Explain Shallow binding and Deep binding with respect to LISP. [6]
- c) What is output of following LISP functions. [4]

- i) (setq a(cons 'b(cons 'c nil)))
- ii) (cdar '((a b) c d e))
- iii) (not (and (eq (+1 2) 3) (< 4 3) (/5 0)))
- iv) (mapcar 'atom '(1 2(a b) 3))

OR

- Q12)**a) Write a LISP program to compute the nth Fibonacci number (i.e. 1,1,2,3,5,8,13,...). [4]

- b) State and explain key features and design goals of LISP. [4]
- c) Explain following expression evaluation techniques with proper examples. [8]

- i) Innermost evaluation
- ii) Selective evaluation
- iii) Outermost evaluation
- iv) Short circuit evaluation

