Total No. of Questions : 12]

SEAT No. :

P2346

[Total No. of Pages :3

[4758] - 84
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

☼ ☼ ☼