

Total No. of Questions : 12]

SEAT No. :

P1419

[Total No. of Pages : 4

[4858] - 186

T.E. (Computer Engg.) (Semester - II)

PRINCIPLES OF PROGRAMMING LANGUAGES

(2008 Pattern)

Time : 3 Hours]

[Max. Marks : 100

Instructions to the candidates :-

- 1) *Answer any three questions from each section.*
- 2) *Answers to the two sections should be written in separate answer books.*
- 3) *Figures to the right side indicate full marks.*

SECTION - I

- Q1)** a) What do you mean by programming paradigms? State key features of following [10]
- i) Functional programming
 - ii) Logic programming
 - iii) Parallel programming
 - iv) Concurrent programming
- b) What is the scope, visibility and lifetime of a following variables. [8]
- i) static variable
 - ii) extern variable

OR

- Q2)** a) Explain difference between recursive call and ordinary call of a program. How recursive subprogram call acts as an important sequence control structure in programming? [8]
- b) Differentiate between structured and nonstructured data type. [4]
- c) What do you mean by storage management? Explain static and dynamic storage management. [6]

P.T.O.

- Q3)** a) What are the features of procedural programming? How procedures and modularity makes procedural programming as a better choice for programs. [8]
- b) With suitable example, demonstrate how nested procedures and functions acts as a efficient program design construct. [8]

OR

- Q4)** a) Explain desirable and undesirable characteristics of procedural programming. [8]
- b) What are parameter passing techniques used in PASCAL? Explain with example. [8]

- Q5)** a) What are advantages and disadvantages of inheritance in Java. [4]
- b) What is difference between pointer and references with reference to object oriented programming. [6]
- c) With suitable examples, demonstrate the role of various predefined exception classes in Java. [6]

OR

- Q6)** a) Explain following kinds of variables supported by Java. [8]
- i) Instance variable ii) Static variable
- iii) Local variable iv) Parameter variable
- b) What do you mean by package/List and explain in brief standard Java packages. [4]
- c) Explain the use of JDBC in database programming. [4]

SECTION - II

- Q7)** a) Explain .Net framework architecture and function of CLR? [10]
- b) Explain types of access specifiers with example. [8]

OR

- Q8)** a) What is a polymorphism and types of polymorphism. [8]
- b) Describe the structure of c# program. [5]
- c) What is a metadata? Mention uses in .NET. [5]

- Q9)** a) Write a following statement in PROLOG. [8]
- i) If Fido is yellow Lab, then Fido is a Dog.
 - ii) If it is Tuesday and it is February, then there is school.
 - iii) If Rajiv is a male and Rajiv is your parent, then Rajiv is your Father.
 - iv) If X is your parent, then X is your mother or X is your father.
- b) State and explain key features of Logical Programming specification. [8]

OR

- Q10)** a) Consider following PROLOG Database of Vehicles/Instrument and their fuels. [8]
- Fuel_Drives(Prtrol, 2 wheeler)
 Fuel_Drives(CNG , 4 wheeler)
 Fuel_Drives(Prtrol,4 wheeler)
 Fuel_Drives(CNG, Truck)
 Fuel_Drives(LPG, Stove)
 Fuel_Drives(Diesel,4 wheeler)
 Fuel_Drives(Kerosene, Batti)
 Fuel_Drives(Diesel, Engine)
 Fuel_Drives(LPG, Batti)
- Identify result in following cases.
- i) Gole: Fuel_Drives (petrol, X) and Fuel_Drives(Diesel, X)
 - ii) Gole: Fuel_Drives (LPG, X) and Fuel_Drives(Y, X)
 - iii) Specify goal to identify all fuels of 4 wheelers
 - iv) Specify goal to identify all vehicles driven by LPG and CNG.
- b) Explain following Preliminary notation used by PROLOG with suitable examples. [8]
- i) Facts
 - ii) Existential Query
 - iii) Clauses
 - iv) Deductions

- Q11)** a) Write a short note on Binding in LISP. [6]
b) Explain numeric predicate function in LISP. [4]
c) Write LISP program to skip last n element from a given list. [6]

OR

- Q12)** a) Write a LISP program to display the result of a given arithmetic operation on two numbers. [4]
b) Explain Shallow binding and Deep binding with respect to LISP.[4]
c) Explain the following expression evaluation techniques with proper examples. [8]
i) Short circuit evaluation
ii) Outermost evaluation
iii) Selective evaluation
iv) Innermost evaluation

