Total No. of Questions : 12]

SEAT No. :

P2452

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T.E. (Computer Engg.)

PRINCIPLES OF PROGRAMMING LANGUAGES

(2008 Pattern) (Semester - II)

Time :3 Hours] *[Max. Marks :100*

Instructions to the candidates:

1) ***Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, from Section I and Q.7 or Q.8, Q.9 or Q.10, Q.11 or Q.12 from section II.***
2) ***Answer to the two sections should be written in separate answer books.***
3) ***Neat diagrams must be drawn wherever necessary.***
4) ***Figures to the right side indicate full marks.***
5) ***Assume Suitable data if necessary.***

SECTION - I

Q1) a) What are different parameter passing methods? Explain each in detail with example. **[8]**

b) Explain programming language paradigms.State example of each paradigms. **[8]**

OR

Q2) a) Why does the use of dynamic scoping imply the need for runtime type checking? **[8]**

b) What do you mean by activation records? How this feature is used for implementing recursive function calls? **[8]**

Q3) a) What are the features of procedural programming? How procedures and modularity makes procedural programming as a better choice for programming. **[8]**

b) Compare C and PASCAL programming languages. **[8]**

OR

P.T.O.

Q4) a) Explain the following with reference to PASCAL Programming language:

i) Scope rules

ii) Local and global variable

iii) Parameter passing

iv) Pointers

v) Data Types **[10]**

b) With suitable diagram demonstrate and explain the execution steps for imperative programming. **[6]**

Q5) a) Comment on implementation differences among JAVA and C++ programming languages. Write a code for some requirements of JAVA & C++. **[10]**

b) What are the benefits of the object oriented model that have led to its increase in popularity? **[8]**

OR

Q6) a) Explain difference between dynamic and static method binding with respect to JAVA programming language. **[10]**

b) Explain JAVA applications and JAVA applets. Draw typical Applet life cycle. **[8]**

SECTION - II

Q7) a) Explain in brief following constructs with respect to .NET framework:**[10]**

i) Arrays

ii) Interfaces

iii) Event Handler

iv) Delegates

v) Classes and methods

b) What is the base class of .NET framework? What is importance of assemblies? **[8]**

OR

Q8) a) Explain value type and reference type with respect to C# **[8]**

b) Describe following public methods of C# **[8]**

i) bool equals ()

ii) int GetHashCode()

c) Describe in brief structure of C# program **[2]**

Q9) a) Explain following conditional predicate with Prolog. **[8]**

i) CUT ii) If then else

b) Explain how backtracking works in prolog. **[8]**

OR

Q10)a) State and explain key features of logical programming specifications. **[8]**

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

Q11)a) Explain numeric predicate functions supported by LISP. **[6]**

b) Whether LISP supports macros and object definition. Justify with example. **[10]**

OR

Q12)a) Describe following properties of functional programming language: **[8]**

i) Lazy function evaluation ii) Referential transparency

b) Compare functional and imperative language with respect to following issues: **[8]**

i) Systematic structure ii) Semantics
iii) Concurrent Execution iv) Data structures