

University of Pune
T.E. (Information Technology)
4363-267
Examination - 2013
Programming Paradigms
(2008 Pattern)

Total No. of Questions : 12

[Total No. of Printed Pages :3]

[Time : 3 Hours]

[Max. Marks : 100]

Instructions :

- (1) Answers to the **two sections** should be written in **separate answer-books**.*
 - (2) Figures to the right indicate full marks.*
 - (3) Neat diagrams must be drawn whenever necessary.*
 - (4) Assume suitable data, if necessary.*
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Section I

Q1. A) State the key features of following programming paradigms.

i) Procedural ii) Object oriented iii) Logic iv) Functional

[8]

B) Explain properties of following data types.

[8]

i) Structured ii) Derived
iii) Scalar iv) Composite

OR

Q2. A) Enlist and explain characteristics of good programming language.

[8]

B) Define term 'Binding'. Explain following classes of binding times.

[8]

i) Language implementation time.
ii) Translation Time
iii) Run Time

Q3. A) Explain the concept of sequence control in recursive subprograms.

[8]

B) What do you mean by exception? Explain its use with example.

[8]

OR

Q4. A) Explain following terms related to variables. [8]

1. Lifetime
2. Scope
3. Static scope
4. Dynamic Scope

B) Compare the programming language 'C' and PASCAL with respect to [8]

1. Subprogram declaration
2. Subprogram invocation
3. Variable declaration
4. Control loops

Q5. A) Explain the concept of Multithreading? Explain the same with respect to JAVA with suitable example. [8]

B) Compare JAVA Application with Java Applets. Draw and explain typical applet life cycle. [10]

OR

Q6. A) Write the features not supported by JAVA but supported by C++. [8]

B) Explain concept of abstract class and interface with respect to Java. [4]

C) State and explain steps required to execute Applet. [6]

Section II

Q7. A) What is Unification and Resolution? Why these are important in Logic Programming? [8]

B) Define function in LISP to find the roots of a quadratic equation. [6]

C) Write output of following primitive functions primitive functions in Lisp. [4]

1. (let ((A 3)) (cons A(let((A 4))A)))
2. (cdr (cdr'(A B C)))

OR

Q8. A) Explain backtracking in Prolog with suitable example. [8]

B) Define following terms with respect to functional programming [6]

1. Ambiguity
2. Free and bound identifier
3. Reduction

C) Explain rules, fact and queries in Prolog with example. [4]

Q9. A) Explain the Flynn's classification of computer architectures. [8]

B) Explain different synchronization mechanisms of parallel programming language. [8]

OR

Q10. A) What do you mean by Granularity? Explain different types of module granularity for parallel execution. [8]

B) Explain the following terms: [8]

1. Data Parallelism
2. Control Parallelism
3. Shared-memory Parallelism
4. Message-passing parallelism

Q11. A) Explain design principles of network system and types of sockets used in network programming. [8]

B) Explain design principles Data flow programming and note firing schemes used in data flow computation. [8]

OR

Q12. Write short notes on following (Any four) [16]

1. Internet Programming.
2. Design principles of Database Programming
3. Socket Programming in Java
4. Parallel compiler
5. Windows Programming.