



314450

Seat No.	
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T.E. (I.T.) (Semester – II) Examination, 2014
PROGRAMMING PARADIGMS
(2008 Pattern)

Time : 3 Hours

Max. Marks : 100

- Instructions :** 1) Answers to the **two** Sections should be written in **separate** answer books.
2) Answer **any three** questions from **each** Section.
3) Neat diagrams must be drawn **wherever** necessary.
4) Figures to the **right** side indicate **full** marks.
5) **Use** of calculator is **allowed**.
6) Assume suitable data if **necessary**.

SECTION – I

1. a) What is data object ? What is life time of data object ? Explain programmer and system defined data object. 10
- b) What do you mean by Dynamic Type checking ? Enlist advantages and disadvantages of dynamic type checking. 8

OR

2. a) Define term 'Binding'. Explain following classes of binding times with suitable example. 10
- i) Language implementation time
ii) Translation time
iii) Run time.
- b) State the key features of following programming paradigms. 8
- i) Procedural
ii) Object oriented
iii) Logic
iv) Functional
3. a) Explain with example the content of code segment and activation record at run time. 8
- b) What are the different problems occurred at the time of expression evaluation ? Explain it with suitable example. 8

OR

4. a) Differentiate between subroutines and co-routine. Discuss their implementation. 6
- b) Explain with example static and dynamic scope rules. 6
- c) What is implicit argument ? Show implicit argument in program. 4

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5. a) What do you mean by applet and further explain life cycle of applet with proper example ? 8
- b) Explain the concept of inheritance with respect to Java and C++ in detail. 8

OR

6. a) Explain the concept of multithreading. Explain the same with respect to java with suitable example. 8
- b) Explain the following concept in Java. 8
- i) Panel
 - ii) Frame
 - iii) Canvas
 - iv) Container

SECTION – II

7. a) What is output of following functional compositions ? 9
- i) CDR (CDR '(A B C))
 - ii) (CDR (CDR '((A B) BC)))
 - iii) (CDR (CAR '(A B C) D)))
 - iv) (CONS (CAR '(A B)) (CDR '(A B)))
 - v) (Member 'B '(A C D E))
 - vi) (CONS 4 (CONS 6 (CONS 8 NIL)))
 - vii) LENGTH (A B C D E)
 - viii) (nth 2 (CDR (A B C D E)))
 - ix) (CAR (CDDR (A B C D E)))
- b) What is Unification and Resolution ? Why these are important in logic programming ? 9

OR

8. a) Define following terms with respect to declarative and functional programming. 9
- i) Facts, Rules and Queries
 - ii) Lambda Calculus
 - iii) Reduction.
- b) Explain backtracking in prolog with suitable example. 4
- c) What is declarative programming paradigm ? How it is different than imperative paradigm. 5



9. a) What is meant by parallel programming ? What are the design principles for parallel programming ? 8
- b) Explain different synchronization mechanisms of parallel programming language. 8

OR

10. a) Explain message passing and shared address space. 8
- b) What do you mean by granularity ? Compare different level of granularity. 8
11. a) Explain design principles data flow programming and note firing schemes used in data flow computation. 8
- b) Explain design principles of Internet Programming. 8

OR

12. a) Write a short note on : 16
- i) Flynn's classification
 - ii) Parallel compiler
 - iii) Windows programming
 - iv) Design principles of Database Programming.
