

C 61586

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Name:

Reg. No:

**FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE
EXAMINATION, APRIL 2014**

(2009 Scheme)

CS 09 404/PTCS 09 403—PROGRAMMING PARADIGM

Time : Three Hours

Maximum : 70 Marks



Part A

Short answer questions (one or two sentences).

All questions are compulsory.

1. List out the different types of programming paradigms.
2. What is an Object and class ? Give an example for each.
3. What are the operations performed on a list ?
4. What is logic programming ? Give any *two* languages that support logic programming model.
5. What is a monitor? What is the use of a monitor ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

Analytical / Problem solving questions.

6. What is abstract syntax tree ? Explain with suitable example.
7. Explain in detail about the major features of object oriented programming.
8. What is runtime memory management ? What support is provided by C++ language for this ?
9. Explain the elements of functional programming.
10. What is a control in PROLOG ? Explain its uses with suitable example.
11. How hardware level parallelism is implemented to perform concurrent programming ? Explain.

(4 × 5 = 20 marks)

Part C

Answer All questions.

Descriptive Analytical / Problem solving questions.

12. (a) Explain lexical syntax and context free grammars with suitable example.

Or

- (b) Explain pointers and dynamic memory allocation methods with example program.

Turn over

13. (a) Create class LIBRARY to maintain the library, book and journal informations. Derive a class STUDENT from LIBRARY to maintain the student information and derive one more class STAFF from LIBRARY to maintain the staff information. Using the above information design an interactive program to use STUDENT and LIBRARY hierarchy or STAFF and LIBRARY hierarchy.

Or

- (b) Write a program to sort a set of numbers of generic data type using class template.
14. (a) Discuss about the storage allocation features of lists with an example program using C++ language.

Or

- (b) Explain the method of converting an infix into prefix expression. Also evaluate the prefix expression.
15. (a) What is a semaphore ? Illustrate its use with producer-consumer problem.

Or

- (b) How synchronized accesses on shared variables are implemented ? What are the consequences that may occur when synchronization is not used on shared variables ?

(4 × 10 = 40 marks)