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**Question Paper Code : 41210**

M.E. DEGREE EXAMINATION, APRIL/MAY 2015.

Second Semester

Computer Science and Engineering

CS 9223/CS 923 — ADVANCED SYSTEM SOFTWARE

(Regulation 2009)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the basic functions of a compiler?
2. Give one example for each parameter passing methods.
3. Draw the symbol table structure.
4. Differentiate high level languages from medium level languages
5. What is meant by in-line expansion?
6. What is meant by branch scheduling?
7. State the need for virtual machines.
8. List the properties of garbage collection.
9. Justify the use of binary translation.
10. State any two real word examples of system software.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the parameter passing methods. (8)  
(ii) Explain the steps involved in implementing subprograms. (8)
- Or
- (b) (i) Explain the dynamic binding of method calls. (8)  
(ii) Describe the memory management unit. (8)



12. (a) Discuss the local and global symbol table structure.

Or

- (b) How MIR and HIR can be represented in ICAN?

13. (a) Explain how leaf-routine and shrink wrapping optimize the calling conventions in a language implementation. (16)

Or

- (b) (i) Give an overview of register allocation using graph coloring. (8)  
(ii) Explain the software pipelining method to improve scheduling instructions. (8)

14. (a) With a neat sketch, explain the Java Virtual Machine Architecture and the Common Language Infrastructure.

Or

- (b) (i) Explain the dynamic class loading mechanism in virtual machines. (8)  
(ii) Explain security mechanism in virtual machines. (8)

15. (a) (i) Discuss the features of computational grids. (8)  
(ii) Explain profiling with an example. (8)

Or

- (b) (i) Explain the instruction set issues that arise in virtual machines with examples. (10)  
(ii) Discuss interpretation in brief. (6)

