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Register Number:

Name of the Candidate:

M.C.A. DEGREE EXAMINATION, May 2015

(FIRST SEMESTER)

151. DATA STRUCTURES AND ALGORITHMS

Time: Three hours   Maximum: 100 marks

SECTION -A   (8 × 5 = 40)
Answer any EIGHT questions

1. Explain the stack operations with example and neat diagram.

2. Write a short note on Hashing.

3. Explain strassen's matrix multiplication.

4. Give a brief note on optimal storage on tapes.

5. Describe the multistage graphs briefly.

6. Write a short note on code optimization.

7. Describe the Hamiltanian cycles.

8. Write a short note on branch and bound method.

9. Explain NP-Hard Graph problem.

10. Give a brief note approximate algorithms for NP-Hard problems.

SECTION -B   (3 × 20 = 60)
Answer any THREE questions

11. Describe the following (i) Depth first search (ii) Breath first search

12. Explain in detail about quick sort algorithm with an example using divide-and-conquer method.

13. Explain AND/OR graph in detail.

14. Explain 8-queen problem with an example.

15. Describe the following

    a) NP-Hard scheduling problem

    b) NP-Hard code generation problems