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B.E. DEGREE EXAMINATION, 2008

(COMPUTER SCIENCE AND ENGINEERING / INFORMATION TECHNOLOGY)

(FOURTH SEMESTER)

COEC – 405 / ITEC – 403. DESIGN AND ANALYSIS OF ALGORITHMS

May] [Time : 3 Hours

Maximum : 60 Marks

Answer any ONE full question from each unit.

UNIT – I

1. (a) Explain the various mathematical notations used in programs. (6)

   (b) With an example, explain how to measure the efficiency of an algorithm. (6)

2. Discuss about the various notations used in algorithm analysis. Illustrate with examples. (12)

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UNIT – II

3. (a) With an example, how to solve the recurrence problems. Analyse its performance. (8)

   (b) Explain how to represent data in Two dimensional array. (4)

4. (a) Explain the uses of Records and Lists. (6)

   (b) What is Binomial heaps ? Explain. (6)

UNIT – III

5. (a) Explain the general characteristics of Greedy algorithm. (4)

   (b) With an example, explain how to find minimum spanning tree. (8)

6. (a) With an example, explain the multiplying large integers using divide-and-conquer approach. (8)

   (b) What is cryptography ? Explain. (4)

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UNIT – IV

7. (a) Write the principle of optimality. (4)

   (b) Explain how to solve shortest path problem using dynamic programming concept. (8)

8. (a) With an example, explain the Depth First Search. (6)

   (b) Explain the concept of branch and bound method. (6)

UNIT – V

9. (a) What is theoretic arguments ? Explain. (6)

   (b) Explain about linear reductions. (6)

8. Write note on :

   (a) Heuristic algorithm. (8)

   (b) Use of approximation algorithms. (4)

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