

Sant Gadge Baba Amravati University, Amravati Summer 2020 Exam

H.V.P.Mandal's College Of Engineering & Technology Amravati.

Course: Computer Science & Engineering

BE Four Year Seventh Semester (Computer Science & Engineering) Summer 2020 Exam

7KS03 Design & Analysis of Algorithms

Assignment ONLY FOR BACKLOG STUDENTS

Marks:20

Note:

1. Solve any Two Questions.
2. Each Question carries 10 Marks.

Question No 1. (10 Marks)

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| a) Define efficiency of algorithm. | 1M |
| b) State and define different algorithms of divide and conquer strategy. | 2M |
| c) Give two differences between greedy method and divide-and-conquer method. | 2M |
| d) Explain the principle of Optimality in Dynamic Programming. | 2M |
| e) Describe Combinatorial Search. | 2M |
| f) Define Recursion. | 1M |

Question No 2. (10 Marks)

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|---|----|
| a) List Various Algorithmic Strategies. | 2M |
| b) State disadvantages of Divide and Conquer strategy. | 2M |
| c) Define Minimum Spanning Tree. | 1M |
| d) Write the algorithm for Chained Matrix Multiplication. | 2M |
| e) Define Search and Traversal of tree. | 2M |
| f) What are the two classes of non-polynomial time problem? | 1M |

Question No 3. (10 Marks)

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|---|----|
| a) Define Regular Expression. | 1M |
| b) Define Searching and Sorting. | 2M |
| c) Define Feasible and Optimal solution. | 2M |
| d) State advantage of dynamic programming algorithmic strategy. | 2M |
| e) State Hamiltonian Cycle. | 2M |
| f) What is non-deterministic algorithm? | 1M |

Question No 4. (10 Marks)

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|---|-----------|
| a) Complexity of algorithm generally measured upon two factors i.e. time complexity and space complexity. State above statement is true or false? | 1M |
| b) Fill in the blank. The running time complexity of Binary search algorithm is _____. | 2M |
| c) Dynamic Programming uses which of the problem solving approach?
1) Top to Bottom 2) Bottom- up 3) None of the mentioned 4) Both 1 and 2
(choose the correct option) | 1M |
| d) Fill in the blanks. The running time complexity of travelling sales person problem is _____ and longest common subsequence is _____. | 2M |
| e) Define chromatic number of a graph. | 2M |
| f) Give any two characteristics of sorting algorithm. | 2M |