



UNIVERSITY OF NORTH BENGAL
BCA Honours 6th Semester Examination, 2021

CC14-BACHELOR OF COMPUTER APPLICATION (62)

DESIGN AND ANALYSIS OF ALGORITHMS

Full Marks: 40

ASSIGNMENT

The figures in the margin indicate full marks.

Answer any two questions

20×2 = 40

1. (a) What is space complexity? Illustrate with an example for fixed and variable part in space complexity? 10
(b) Write the pseudo code for expressing Algorithm. 10
2. (a) Explain the basic methodology of divide and conquer algorithm. List the advantages of divide and conquer algorithm. 10
(b) Explain the general principle of Greedy method and also list the applications of Greedy method. 10
3. (a) Explain the principle of Binary search technique with an example and also List the drawbacks of it. 10
(b) Derive the Best, Worst and Average time complexities of Quick sorting technique. 10
4. (a) Discuss briefly about Decision Tree with example. 10
(b) Prove that “**Every Red Black Tree with n nodes has height $\leq 2\log_2(n+1)$** ”. 10

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