C.Sc. 540-2081 ✡

Candidates are required to give their answers in their own words as for as practicable.
The figures in the margin indicate full marks.

Section A

Long answer questions:
Attempt any two questions.   [2×10=20]

1. Why online algorithms are difficult to handle? Explain ski rental problem with necessary [3+7] equations.

2. Perform bitonic sort for the given sequence A= 2,5,1,3 and B 4,7,6,8 in a butterfly [10] network.

3. What do you mean by amortized cost analysis? Explain accounting method of amortized [10] cost analysis with reference to table doubling of hash table.

Section B

Short answer questions:
Attempt all questions.   [5×5=25]

4. Explain embedding of binary tree on Hypercube. Calculate Expansion and Dilation.   [5]

5. Explain the concept of data concentration in a mesh with an example of your own.   [5]

6. Perform prefix computation for the following sequence in PRAM   [5]
   environment 1,4,5,6,7,8,3,4,5,11,12,9,20,14,13,2.

7. What is the difference between Polynomial and Non Polynomial problems? List some   [5]
   examples as well.

8. Write short notes   [2×2.5=5]
   a. Primality testing
   b. Broadcasting

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