বিদ্যাসাগর বিশ্ববিদ্যালয়
VIDYASAGAR UNIVERSITY
Question Paper

B.Sc. Honours Examinations 2022
(Under CBCS Pattern)
Semester - IV
Subject : COMPUTER SCIENCE
Paper : C 8 - T
[DESIGN AND ANALYSIS OF ALGORITHMS]

Full Marks : 40
Time : 2 Hours

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

Group - A

Answer any *four* questions :   5×4=20

1. Differentiate between algorithm and program. Write down the characteristics of algorithm.

   2+3

2. Define correctness of an algorithm. What is instance of a problem?   3+2

3. Why finding efficiency of an algorithm is essential? Define time complexity analysis of algorithm.

   2+3

4. How to implement a Max heap with an array. Write down the property of max heap.

3+2

5. Explain the division method of array into sub array used in Quick sort. 5

6. How collision occurs during Hashing? Explain a method to resolve such collision. 2+3

Group - B

Answer any *two* questions : 10×2=20

1. What do you understand by asymptotic analysis? Briefly discuss asymptotic. tight bound and asymptotic upper bound. 2+(4+4)

2. Write and explain merge sort algorithm. 10

3. Define multi graph. Compare BFS with DFS. 2+8

4. What is spanning tree? Explain Kruskal's algorithm of finding minimum spanning tree with a proper example. 2+8

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