BACHELOR OF TECHNOLOGY (C.B.C.S.) (2014 COURSE)

B.Tech.Sem - VI IT :SUMMER- 2022

SUBJECT : DESIGN & ANALYSIS OF ALGORITHMS

Day : Friday | Time : 02:30 PM-05:30 PM

Date : 17-06-2022 | **S-13420-2022** | Max. Marks : 60

N.B.

1) All questions are **COMPULSORY.**

2) Figures to the right indicate **FULL** marks.

3) Draw neat and labelled diagram **WHEREVER** necessary.

4) Assume suitable data, if necessary.

Q.1 Describe symptotic and asymptotic notations along with suitable example. **(10)**

OR

Q.1 Describe linear and non-linear data structures with reference to suitable example. **(10)**

Q.2 Explain with an example how travelling salesman problem can be solved using brute force approach? **(10)**

OR

Q.2 Elaborate with suitable example knapsack problem using brute force. **(10)**

Q.3 Explain how complexity of multiplication of large integers can be reduced using Strassen's matrix multiplication? **(10)**

OR

Q.3 Elaborate binary tree traversal and its related properties. **(10)**

Q.4 Describe with suitable example Huffman trees. **(10)**

OR

Q.4 Explain Prim's algorithm with an example. **(10)**

Q.5 Using dynamic programming describe subset sum problem to find the subset of input set given below. **(10)**
For input: set [] = {3, 34, 4, 12, 5, 2}, sum=9.

OR

Q.5 Explain 8-queens problem with backtracking. **(10)**

Q.6 Explain Resource allocation algorithm with deadlock avoidance. **(10)**

OR

Q.6 Explain deadlock detection and avoidance implementation with an example. **(10)**

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