AOA Assignment

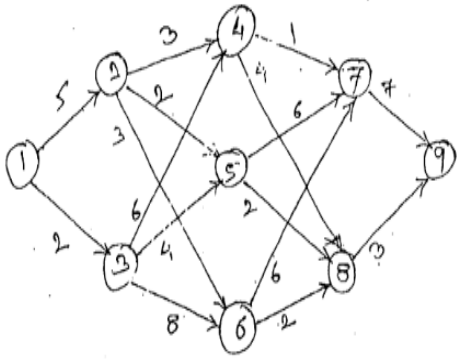
Notes:

1. Write the assignment 1 & 2 on different pages.
2. We will share the links to submit the assignment

Assignment-1

Q. No	Question
1	Define Big – O, Θ, and Ω notations. Find the complexity of given recurrence relations using Master Method Theorem. (i) $T(n) = 4T\left(\frac{n}{2}\right) + n^2$ (ii) $T(n) = 4T\left(\frac{n}{4}\right) + n^3$
2	Let n = 4, (p1, p2, p3, p4) = (25, 2, 4, 7) and (d1, d2, d3, d4) = (2, 1, 2, l). Find feasible solutions using job sequencing with deadlines. Also find optimal solution using job sequencing with deadlines.
3	Consider the following instance of objects where first value is profit and second value is weight. Find out the Maximum profit using greedy method for the Knapsack size of 50. A = $\{(60, 10), (100, 20), (120, 30)\}$
4	Given a string T = b a c b a b a b a b a c a a b and a pattern P = a b a b a c a. Use Knuth – Morris – Pratt algorithm to find whether 'P' occurs in 'T'.

Assignment-2

Q. No.	Question
1	Explain sum of subset problem. Find all possible subsets of weight that sum to m. Let n = 8, m = 35, and w [1:8] = {5, 10, 12, 13, 15, 17, 18, 20}.
2	Find a minimum cost path from 1 to 9 in the given graph using dynamic programming. 
3	Find the minimum cost of the tour using Branch-and-Bound. $\begin{bmatrix} 0 & 10 & 5 & 0 \\ 15 & 20 & 9 & 10 \\ 6 & 13 & 8 & 8 \\ 0 & 12 & 9 & 0 \end{bmatrix}$
4	Explain 15-puzzle problem with an example.