



## SECTION-B

- 11) Find the Big-OH notations for the following functions :
  - a)  $f(n) = 78889$
  - b)  $f(n) = 6n^2 + 135$
  - c)  $f(n) = 7n^2 + 8n + 56$
  - d)  $f(n) = n^4 + 35n^2 + 84$
- 12) What do you analyze in an algorithm? What is the basis of analysis? Explain
- 13) What are greedy algorithms? What are their characteristics? Explain any greedy algorithm with example.
- 14) Explain the KMP algorithm in detail with an illustrative example.
- 15) Write an algorithm to solve APSP problem.

## SECTION-C

- 16) Consider five items along with their respective weights and values :  
 $I = \langle i_1, i_2, i_3, i_4, i_5 \rangle$   
 $w = \langle 5, 10, 20, 30, 40 \rangle$   
 $v = \langle 30, 20, 100, 90, 160 \rangle$   
  
The capacity of the knapsack  $W = 60$ . Find the solution for the fractional knapsack problem.
- 17) What is the relationship among P, NP and NP complete problems? Show with the help of a diagram.
- 18) Compare the various programming paradigms such as divide-and-conquer, dynamic programming and greedy approach.

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