

SE - COMP - CBAS  
Sem IV - Analysis of Algorithms  
Dt: - 23/5/14

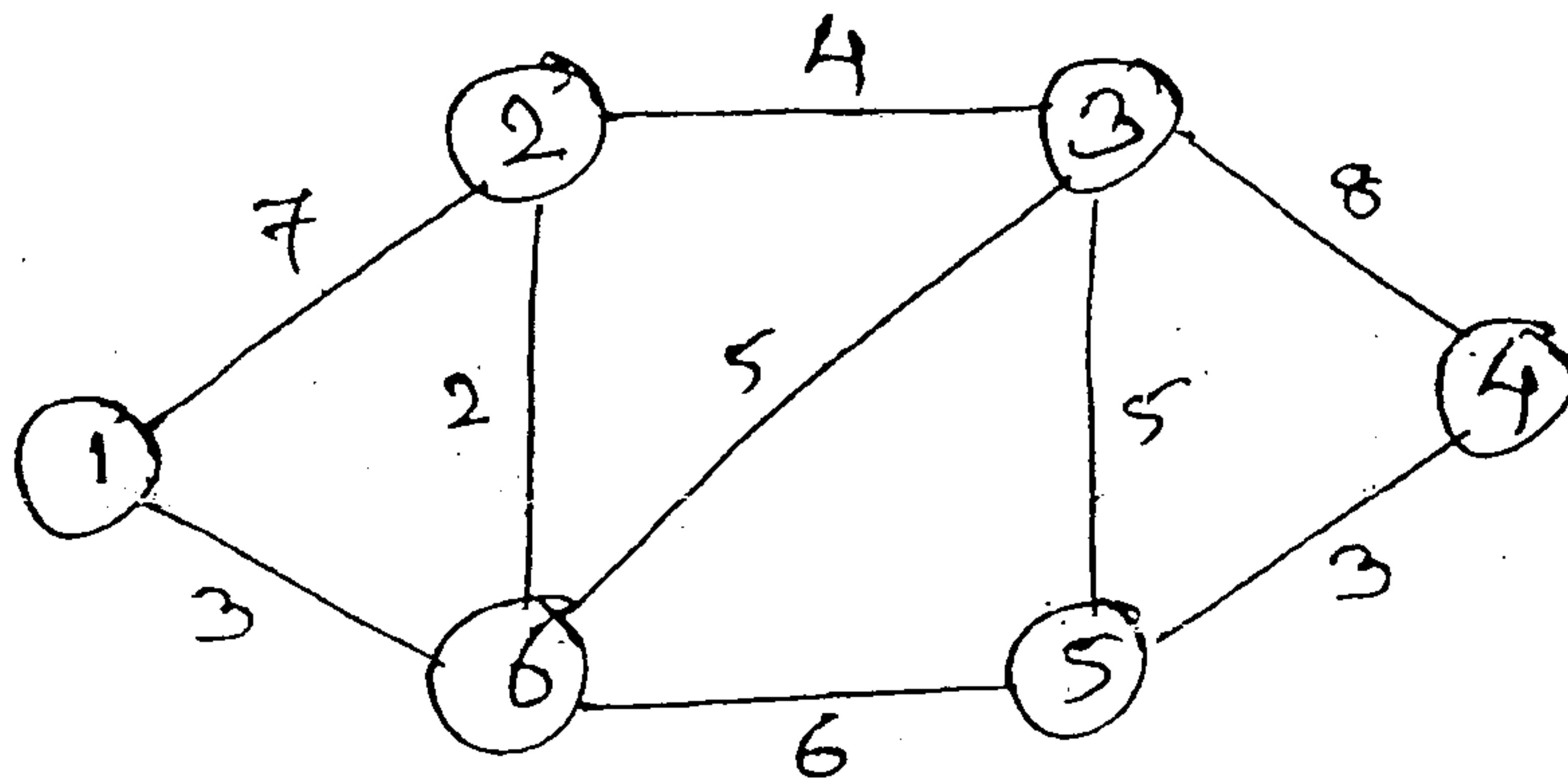
QP Code : NP-19722

(3 Hours)

[ Total Marks : 80

- N.B. : (1) Solve any **four** from **six** questions.  
(2) Assume suitable data wherever required.

1. (a) Explain  $O$ ,  $\Omega$  and  $\theta$  Notations with the help of Graph. And represent the following function using above notations. 10
  - (i)  $T(n) = 3n + 2$
  - (ii)  $T(n) = 10n^2 + 2n + 1$
- (b) Explain 0/1 Knapsack Problem with example. 10
2. (a) Write an algorithm of sum of subsets. Solve following problem and draw portion of state space tree  $M = 35$ ,  $W = (5, 7, 10, 12, 15, 18, 20)$ . 10
- (b) Explain longest common subsequence with example. 10
3. (a) Explain all pair shortest path algorithm with suitable example. 10
- (b) Explain different string matching algorithms. 10
4. (a) Write a Min Max function to find minimum and maximum value from given set of values using divide and conquer. Also drive its complexities. 10
- (b) Comment on any two modules of computation. 10
5. (a) To find Dijkstra's shortest path from vertex 1 to vertex 4 for following graph. 10



- (b) Explain flow shop scheduling with example. 10
6. Write note on :— (any two) 20
  - (a) Job sequencing with deadlines
  - (b) Randomized Algorithm
  - (c) The 15 Puzzle Problem
  - (d) N-Queen Problem.