Register Number:
Date: 27.10.2018

ST. JOSEPH'S COLLEGE (AUTONOMOUS), BANGALORE-27

M.Sc COMPUTER SCIENCE - I SEMESTER

SEMESTER EXAMINATION: OCTOBER 2018

CS7318 - DESIGN AND ANALYSIS OF ALGORITHMS

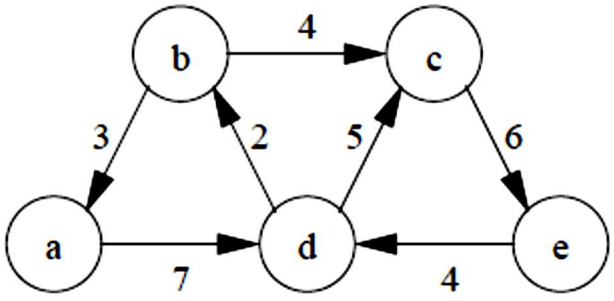
Time- 2 1/2 hrs **Max Marks-70**

This paper contains one printed page and one part

PART I

Answer any Seven Questions. **7 X 10 = 70 Marks**

1. Computing works efficiently based on the efficient algorithms. Analyse this statement with a suitable example.
2. Write a note on algorithm design paradigms and explain how they are used in different scenario.
3. Explain the working of quick sort algorithm with example.
4. Analyse the use of binary search algorithm with best, worst and average cases.
5. Solve the following instances of the single-source shortest-paths problem with vertex a as the source.



6. How will you implement Warshall's algorithm without using extra memory for storing elements of the algorithm's intermediate matrices.
7. How will you solve traveling salesman problem using approximation algorithms.
8. Explain the Hamiltonian cycles with a suitable example
9. Describe NP-Hard and NP-Complete problems.