S-E- Comp. sem IV CBSGS 19-5-16
Sub:- Analysis of Algo.

QP CODE : 541401

(3 Hours) **Total Marks: 80**

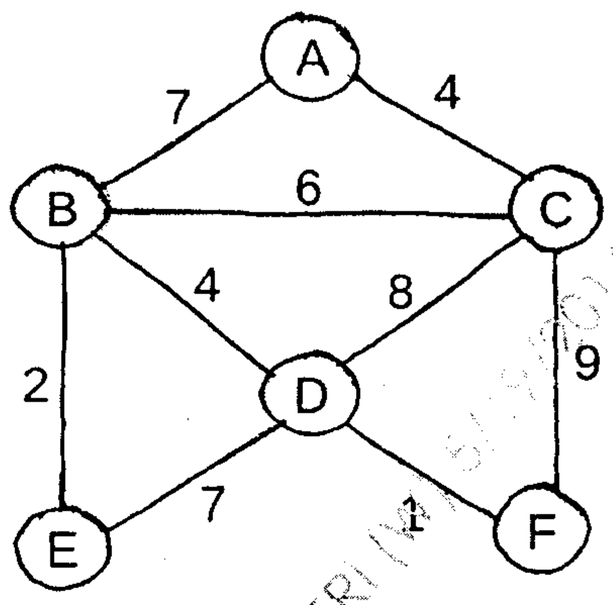
N.B.: (1) Question No. 1 is compulsory.
(2) Attempt any three questions out of remaining five questions.

Q1. a) Explain the asymptotic notatinos. [10]
b) Write an algorithm to find minimum and maximum value using divide and conquer and also derive its complexity. [10]

Q2. a) Explain the concept of multiplying long integers using divide and conquer. [10]
b) Sort the following numbers using Quick Sort. Also derive the time complexity of Quick Sort. [10]
50, 31, 71, 38, 77, 81, 12, 33

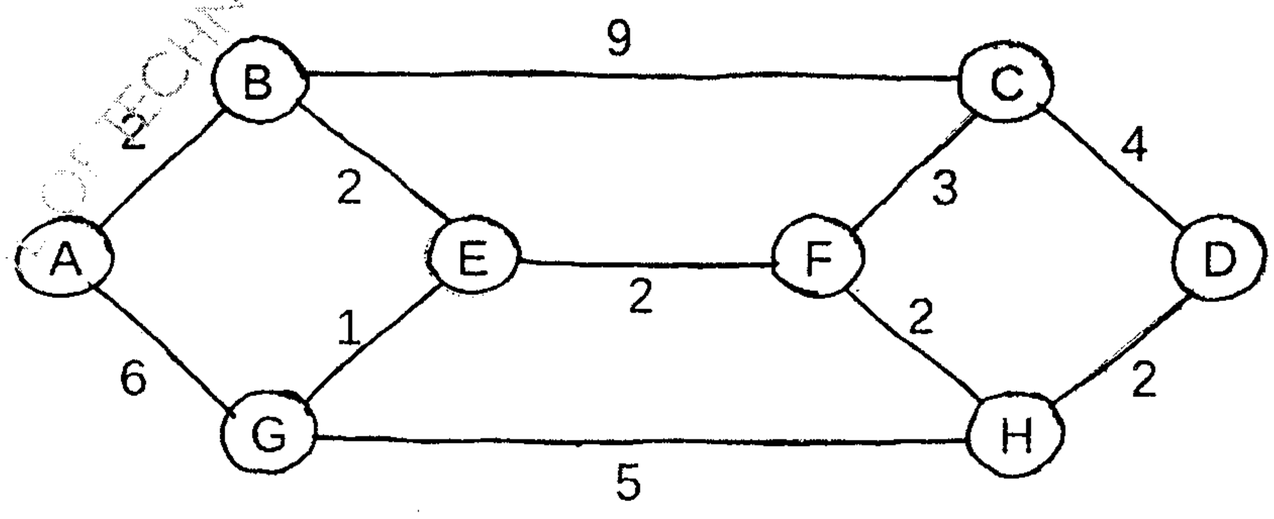
Q3. a) Solve the following Job sequencing with deadlines problem [10]
n=7, Profits(p1, p2,.....,p7) = {3, 5, 20, 18, 1, 6, 30}
Deadlines(d1,d2,.....,d7) = {1, 3, 4, 3, 2, 1,2}
b) Explain different string matching algorithms. [10]

Q4. a) Find the Minimum Spanning Tree of the following graph using Kruskal's algorithm [10]



b) Explain flow shop scheduling with example. [10]

Q5. a) Write an algorithm for sum of subsets. Solve the following problem. [10]
M=30 W={5, 10, 12, 13, 15, 18}
b) Find the shortest path from source vertex A using Dijkstra's algorithm [10]



Q6. Write note on (any two): [20]
a) Strassen's matrix multiplication.
b) 8-Queen problem.
c) Graph coloring
d) 15-puzzle problem.

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