

LNCT UNIVERSITY BHOPAL  
First Mid Semester Examination  
Analysis Design of Algorithm (CS/AL-402)  
Branch: CSE Semester: IV

Time 1:30 Hrs

Max. Marks 20

**Note: All questions are compulsory**

**Q.1** What is an asymptotic notation? Give the different notations to use to represent the complexity of algorithm.  
(C01 5marks)

OR

What is heap sort? Apply heap sort algorithm for sorting 66,33,40,21,53,89,60,16,74,31,48,66

**Q.2** Explain Strassen's matrix multiplication technique with example.  
(C01 marks)

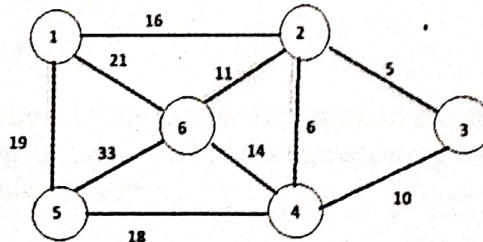
OR

Sort the following list using quick sort 37, 96, 41, 10, 09, 61, 71, 52, 22, 32, 5

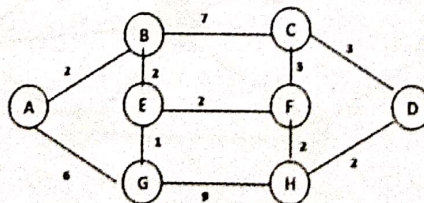
**Q.3** Explain the Greedy strategy for optimal merge patterns with example.  
(C02 marks)

OR

Find minimum spanning tree using Prim's algorithm for graph given blow –



**Q.4** Explain Dijkstra's algorithm and find shortest path for A to D for the following graph. (C01 5marks)



OR

Write short note on job sequencing with deadline and explain with an example.