

**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)**

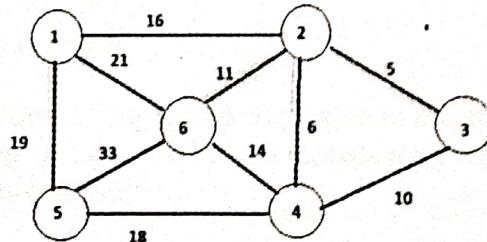
**OR**

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

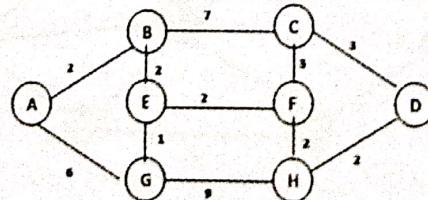
**Q.3** Explain the Greedy strategy for optimal merge patterns with example. **(C02 marks)**

**OR**

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



**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.