

NAME: .....

## MAT 518 , ASSIGNMENT-1

1. Sketch the following graphs :  $C_4, W_5, K_{2,4}$

2. Sketch the graph corresponding to the adjacency matrix

$$A = \begin{bmatrix} 0 & 1 & 0 & 1 & 1 \\ 1 & 0 & 1 & 0 & 2 \\ 0 & 1 & 0 & 1 & 0 \\ 1 & 0 & 1 & 0 & 1 \\ 1 & 2 & 0 & 1 & 0 \end{bmatrix}$$

3. Considering the graph of the problem 2, find an Euler Path, that is a simple open path traveling all edges.

4. Compute the degrees of each vertex in the graph of the problem 2.

5. Show that  $2x^2 + x + 1$  is  $O(x^2)$