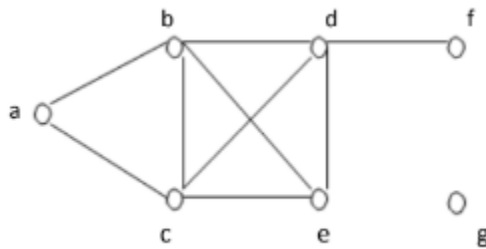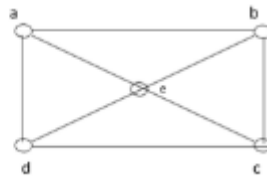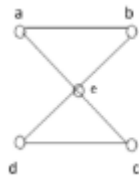# Discrete Structures

Assignment – 2

Due Date: Jestha – 16 (May - 30)

1. How can Zero-one matrix and diagraphs be used to represent a relation?
2. Explain the process of identifying whether the graph is reflexive, symmetric, or anti-symmetric by using matrix or diagraph with suitable example.
3. Distinguish between multi graph and pseudo graph with suitable examples.
4. Verify the Handshaking theorem in the figure.

5. How many edges are there in graph with 10 vertices each of degree six?
6. Define the complete graph K_n on n vertices and the complete bipartite graph $K_{m,n}$ with suitable examples.
7. What is the chromatic number of a graph?
8. Distinguish between undirected and directed graphs with illustrations.
9. Which of the undirected graphs in the following figure have a Euler circuit? Explain.

10. Is the graph K4 planar? How?