

**Figure 1** Algorithm Illustration given 4 peptides :, their identification probabilities and 3 candidate proteins : Ellipsoids on the left represent peptide nodes and the ones on the right represent protein nodes while the text inside corresponds to the peptide/protein sequence. Peptide nodes are only connected to their matching protein nodes as colored (multiple connections represent match at multiple sites). **(a)** To calculate peptide scores , divide each peptide probability by the corresponding node’s degree . **(b)** To calculate edge scores related to a given peptide node , assign the score for all edges connected to that peptide node . **(c)** Finally, to calculate protein scores , the scores for edges connected to each protein node would be summed up.