

**Ans:(5)**

To pick the best decomposition of nodes into communities in both the Girvan-Newman and Louvain algorithms, the primary criterion is maximizing modularity, a measure that reflects the density of edges within communities compared to edges between communities. In the Girvan-Newman algorithm, the process involves progressively removing edges with the highest betweenness centrality and calculating the modularity after each removal; the best decomposition is identified when modularity reaches its peak. In contrast, the Louvain algorithm iteratively refines the community structure by optimizing modularity through local moves of nodes between communities, followed by aggregation of the network and further refinement. The decomposition with the highest modularity score, in both algorithms, is considered the optimal division of the network into communities, as it represents the most cohesive and distinct groupings of nodes.