Abstract

Let $\xi = \cup_j G_j$ be a collection of graphs and λ_j be their corresponding least eigenvalues (e-values). If the least e-value λ_k of graph $G_k \in \xi$ is minimum among all the least e-values λ_j then G_k is known as a *minimizing graph* in given collection. For convenience, denote minimizing graph as mG. Graphs with only one cycle are called unicyclic graphs. A speciality of unicyclic graph is that its order and size are equal. The main purpose of our work is to characterize the mG that belongs to a set of graphs in which complement of each graph is a unicyclic graph with girth four.