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## ISOMORPHIC DEGREE SPLITTING GRAPHS(Article)(Open Access)

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### Abstract

Let  $G(V, E)$  be a graph and let  $V_i$  denote the set of all vertices of degree  $i$ . The degree splitting graph  $DS(G)$  of  $G$  is obtained from  $G$ , by adding a new vertex  $w_i$  for each partition  $V_i$  such that  $|V_i| \geq 2$  and joining  $w_i$  to each vertex of  $V_i$ . In this paper, we characterise graphs for which degree splitting graphs are trees or unicyclic. We develop an algorithm to check whether the given graph is a degree splitting graph of a graph. Also we establish some necessary conditions for the existence of non isomorphic graphs to have isomorphic degree splitting graph. 2010 Mathematics Subject Classification. 05C78. © 2020 Asia Pacific Journal of Mathematics

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