We have thus proved Theorem 1. We illustrate this result by the following examples.

Example 1: \( n = 5, a_1 = a_2 = a_3 = a_4 = 1 \) (see Figure 2).

Example 2: \( n = 9, a_1 = 1, a_2 = 1, a_3 = 3 \) (see Figure 3).

We note the following corollaries, most of which have been proven elsewhere.

**Corollary 4.** The complete graph, \( K_n(= S(n; 1, 2, \ldots, (n - 1)/2)) \), is edge-graceful when \( n \) is odd [6].

**Corollary 5.** The \( k \)th power cycle, \( C_n^k(= S(n; 1, 2, \ldots, k)) \), where \( 1 \leq k \leq (n - 1)/2 \), is edge-graceful when \( k < n/2 \) (see [9, 11, 13]).

**Corollary 6.** The multicycle \( kC_n \), where there are \( k \) multiple edges for each pair of adjacent vertices, is edge-graceful if \( n \) is odd.

**Proof:** We note that \( kC_n \) is \( S(n; a_1, a_2, \ldots, a_k) \), where \( a_1 = a_2 = \ldots = a_k = 1 \).

**Corollary 7.** The regular complete \( k \)-partite graphs, \( K_{n,n,\ldots,n} \), is edge-graceful if both \( n \) and \( k \) are odd [10].

**Proof:** It is not difficult to see that \( K_{n,n,\ldots,n} \) can be expressed as the step-multigraph \( S(nk; 1, 2, \ldots, k - 1, k + 1, \ldots, 2k - 1, 2k + 1, \ldots, jk - 1, jk + 1, \ldots, (nk - 1)/2) \); see also [10].

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