Available online at http://scik.org
Commun. Math. Biol. Neurosci. 2025, 2025:92
https://doi.org/10.28919/cmbn/9190
ISSN: 2052-2541

GRAPH-THEORETICAL ANALYSIS OF PERIPHERAL MOLECULAR DESCRIPTORS FOR PHLOROGLUCINOL USED IN THE TREATMENT OF SPASMODICPAIN

MUHAMMAD ABID[1,*], KASHIF ALI[1], MUHAMMAD IMRAN QURESHI[2], REDA M. RADWAN[3], ÜMIT KARABIYIK[4]

[1]Department of Mathematics, COMSATS University Islamabad, Lahore campus, Lahore, Pakistan

[2]Department of Mathematics, COMSATS University Islamabad, Vehari campus, Vehari 61100, Pakistan

[3]Department of Diagnostic Radiography Technology, College of Nursing and Health Sciences, Jazan University, Jazan, 45142, Saudi Arabia

[4]Mathematics and Computer Science, Necmettin Erbakan University, Konya, Turkey

Abstract. This article presents a detailed mathematical analysis and computational approach to peripheral-based molecular descriptors of the phloroglucinol molecular graph, focusing on their relaionship with key chemical properties. Phloroglucinol, a polyphenolic compound with significant biochemical and pharmacological relevance, can be represented graph-theoretically, where molecular descriptors provide crutial insights into its structural and chemical behaviour. Using graph theory, we compute mostar index, that capture peripheral molecular features. The study highlights how these descriptors relate to phloroglucinol,s chemical properties, such as stability, reactivity, and potential biological activity. Furthermore, computational algorithms are employed to validate and optimize descriptor calculations, offering a comprehensive framework for studying the molecular characteristics of phloroglucinol. The findings contribute to the broader understanding of molecular graph theory applications in chemistry and pharmaceutical sciences.

Keywords: molecular descriptors; reactivity; Mostar index; edge version Mostar index.

2020 AMS Subject Classification: 92E10.

---

*Corresponding author
E-mail address: rmabidmath002@gmail.com
Received February 13, 2025

1. Introduction

Phloroglucinol is a naturally occurring organic compound belonging to the phenol family, widely recognized for its medicinal properties and applications in pharmaceuticals. As a trihydroxybenzene derivative, it plays a crucial role in various chemical and biological processes, notably for its use as an antispasmodic agent in treating gastrointestinal disorders. Additionally, phloroglucinol serves as a key intermediate in the synthesis of several medicinal compounds and polymers. Its unique molecular structure, characterized by three hydroxyl groups attached to a benzene ring, gives it distinctive chemical properties, making it a subject of interest in medicinal chemistry, pharmacology, and materials science. Topological indices are graph invariants that associate numerical values with graphs, helping to describe their properties. In chemical graph theory, these indices are essential for analyzing and understanding the structures of various molecular graphs. The concept of topological indices was first introduced by Harold Wiener in 1947 [1]. He later published a series of papers establishing the relationship between the Wiener index and the physicochemical properties of carbon-based compounds [2]. In the late 20th century, numerous topological indices related to the Wiener index were developed [6]. Moving into the second decade of the 21st century, irregularity-based topological indices were computed for various chemical structures [10]. In 2016, Indian mathematician V. R. Kulli introduced several new Banhatti indices, including the K Banhatti indices, modified Banhatti indices, and hyper K Banhatti indices [11].

In the last decade, irregular, distance, and degree-based topological indices have become hot topics for researchers in chemical graph theory. Some researchers including A. Fahad and M. I. Qureshi worked on some eccentricity-based topological indices and polynomials of Poly(EThyleneAmidoAmine)(PETAA) dendrimers in 2019 [12]. In the mid of November 2020, A. Fahad computed topological descriptors of Poly Propyl Ether Imine (PETIM) Dendrimers [13]. In 2020, M. I. Qureshi worked on zagreb connection index of drugs related chemical structures [14]. In 2021, Yu-Ming Chu computed Irregular topological indices of certain metal-organic frameworks [15].

The bond-additive topological descriptors are increasingly used to specify the aspects of chemical graphs and their fragments. The first bond additive index was the famous Wiener index, in which every bond gives a contribution that is equal to the product of the number of atoms on each side of the bond. Inspired by the different successful topological descriptors such as Szeged, revised-Szeged, PI, irregularity, and Zagreb, recently, a new bond-additive topological descriptor, the Mostar index, has been introduced by Došlic et al. [16]. This index provides facts about the peripherality of individual bonds and then sums the inputs of all bonds into a global measure of peripherality for the underlying chemical structure. Peripherality is even more important in Chemistry. It is useful to predict physico-chemical properties of their molecules.

Došlic et al determine the Mostar index of benzenoid systems in [17]. Furthermore, they also find the extremal values for trees and unicyclic graphs. Later, the expressions for the Mostar index of bicyclic graphs were given in [18]. In [19] Tratnik proved that the Mostar index of a weighted graph can be deduced in the form of Mostar indices of quotient graphs. Arockiaraj et al computed the accurate values of the Mostar index for the family of carbon nanocone and coronoid structures in [20]. Arockiaraj et al [21] computed the weighted Mostar indices of molecular peripheral shapes with applications in graphene, graphyne, and graphdiyne nanoribbons. Hayat and Zhou determined the extremal values of the Mostar index for the structures of trees and cacti in [22].

The Mostar index of a graph G is defined as $Mo(G) = \sum_{uv\varepsilon E(G)} |n_u - n_v|$ where n_u and n_v are the number of vertices of G closer to u than v and the number of vertices of G closer to v than u respectively. The edge version of mostar index is defined as $Mo_e(G) = \sum_{e=uv\varepsilon E(G)} |m_u - m_v|$ where m_u and m_v are the number of edges of G closer to u than v and the number of edges of G closer to v than u respectively.

2. Structure of Phloroglucinol

The structure of phloroglucinol, also known as 1,3,5-trihydroxybenzene, can be represented by a molecular graph, denoted as G[m,n], where the vertices and edges correspond to atoms and bonds, respectively. This graph highlights the symmetrical arrangement of hydroxyl groups at positions 1, 3, and 5 on the benzene ring. To analyze the molecular properties of this structure, we compute the Mostar index and the edge version of the Mostar index for the 1,3,5-trihydroxybenzene graph G[m,n]. These indices help measure the structural asymmetry and provide insight into the molecular behavior, which is crucial for understanding the compound's chemical properties and potential applications in materials science and pharmacology.

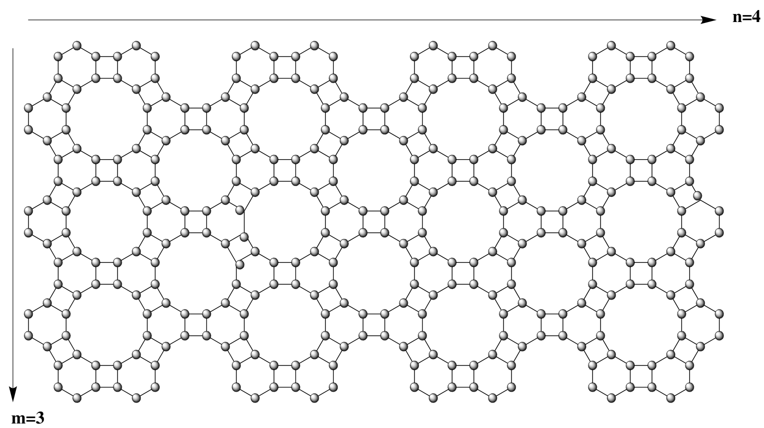


FIGURE 1. 1, 3, 5-Trihydroxybenzene Graph [3, 4]

Let G be a graph of 1, 3, 5-Trihydroxybenzene[m, n]. Then horizontal and vertical qocs are shown in the given figure 2 and oblique qocs are shown in figure 3 and 4.

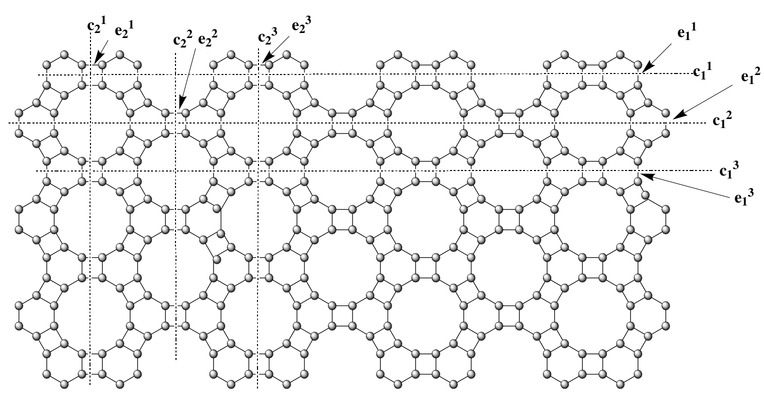


FIGURE 2. The horizontal and vertical qocs

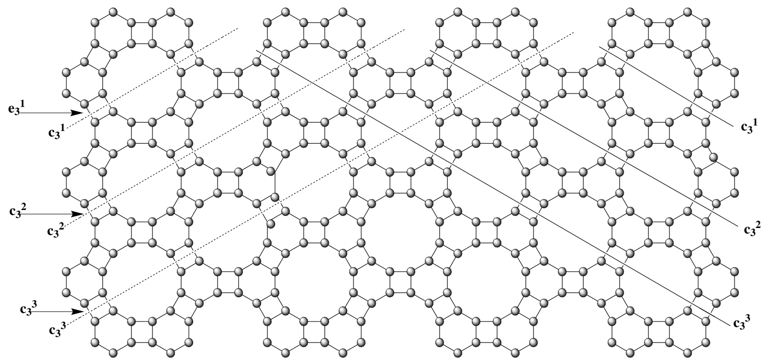


FIGURE 3. The oblique qocs

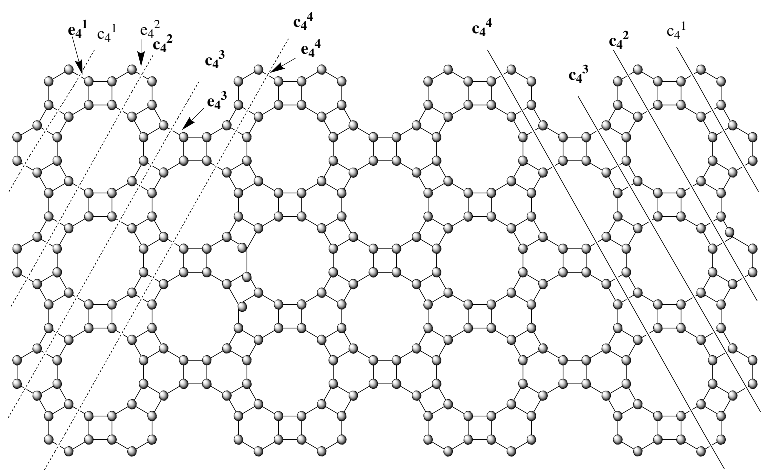


FIGURE 4. The oblique qocs

3. MAIN RESULTS

We will analyze our molecular structure through four distinct cases, applying a variant of the cut method based on the Djoković-Winkler relation, denoted as Θ. In the first case, we will compute both the Mostar index and the edge version of the Mostar index for the graph with $m = 1$. In the second, third, and fourth cases, we will calculate these indices for graphs where

$m \equiv 0 \pmod 3$, $m \equiv 1 \pmod 3$, and $m \equiv 2 \pmod 3$, respectively, for all $n > m$. Additionally, we will incorporate the use of the floor function, which maps a real number n to the greatest integer less than or equal to n, denoted as $\lfloor n \rfloor$. Specifically, we will use the result $\lfloor \frac{n}{2} \rfloor = \frac{n}{2}$ when n is even, and $\lfloor \frac{n}{2} \rfloor = \frac{n-1}{2}$ when n is odd. Throughout the article, we will also employ the notation i to represent quasi-orthogonal cuts (qoc's).

We discuss the first case for $m = 1$. A graph $G[1,n]$ has $36n$ number of vertices and $50n-2$ number of egdes. The graph $G[1,n]$ is shown in the figure. There are three families of orthogonal cuts, horizontal, vertical and oblique.

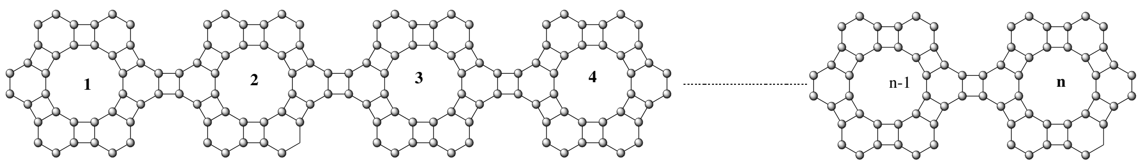


FIGURE 5. 1, 3, 5-Trihydroxybenzene Graph [1, n]

Theorem 3.1. *For a graph G of 1, 3, 5-Trihydroxybenzene [1, n], $\forall n \varepsilon N$, the Mostar index of the graph is*

$$Mo(G) = 8n|36n-12| + 8|36n - 36(\lfloor \frac{1}{2}n \rfloor + 1)^2 + 108(\lfloor \frac{1}{2}n \rfloor)| + 4|36n - 36(\lfloor \frac{1}{2}n + \frac{1}{2} \rfloor)^2 + 36(\lfloor \frac{1}{2}n + \frac{1}{2} \rfloor)| + 16|36n + 72 - 36(\lfloor \frac{1}{2}n \rfloor + 1)^2 + 36(\lfloor \frac{1}{2}n \rfloor)| + 16|36n + 24 - 12(\lfloor \frac{3}{2}n \rfloor + 1)^2 + 12\lfloor \frac{3}{2}n \rfloor|$$

Proof. Let G be a 1, 3, 5-Trihydroxybenzene Graph$[1,n]$ as shown in the figure 5. For $G[1,n]$ the number of edges corresponding to qoc's are given in the table 1. By using table 1, the Mostar index is given below.

Types of qoc's	Types of edges	No. of qoc's	No. of Edges	Peripherality of edges
C_1^1	e_1^1	3	$4n$	$\|36n-12\|$
c_2^1	e_2^1	n	4	$\|36n-36-72\sum_{i=1}^{\lfloor \frac{n}{2} \rfloor}(i-1)\|$
c_2^2	e_2^2	$n-1$	2	$\|36n-72\sum_{i=1}^{\lfloor \frac{n-1}{2} \rfloor} i\|$
c_3^1	e_3^1	$2n$	4	$\|36n+36-72\sum_{i=1}^{\lfloor \frac{n}{2} \rfloor} i\|$
c_4^1	e_4^1	$6n$	4	$\|36n+12-24\sum_{i=1}^{\lfloor \frac{3n}{2} \rfloor} i\|$

TABLE 1. Edge partition of 1, 3, 5-Trihydroxybenzene Graph[1, n]

$$Mo(G) = \sum_{uv\varepsilon E(G)} |n_u - n_v|$$

$$= 2\times 4n \times |36n-12| + 2\times 4\times |36n-36-72\sum_{i=1}^{\lfloor \frac{n}{2} \rfloor}(i-1)| + 2\times 2\times |36n-72\sum_{i=1}^{\lfloor \frac{n-1}{2} \rfloor} i|$$

$$+2\times 2\times 4\times |36n+36-72\sum_{i=1}^{\lfloor \frac{n}{2} \rfloor} i| + 2\times 2\times 4\times |36n+12-24\sum_{i=1}^{\lfloor \frac{3n}{2} \rfloor} i|$$

$$= 8n|36n-12| + 8|36n-36(\lfloor \frac{1}{2}n \rfloor +1)^2 + 108(\lfloor \frac{1}{2}n \rfloor)| + 4|36n-36(\lfloor \frac{1}{2}n+\frac{1}{2} \rfloor)^2 + 36(\lfloor \frac{1}{2}n+\frac{1}{2} \rfloor)| + 16|36n+72-36(\lfloor \frac{1}{2}n \rfloor +1)^2 + 36(\lfloor \frac{1}{2}n \rfloor)| + 16|36n+24-12(\lfloor \frac{3}{2}n \rfloor +1)^2 + 12\lfloor \frac{3}{2}n \rfloor|$$

□

Theorem 3.2. *For a graph 1, 3, 5-Trihydroxybenzene([1, n], $\forall n \varepsilon N$), the edge version of Mostar index of the graph is*

$$Mo_e(G) = 8n|50n-16|+40|50n-50(\lfloor\frac{1}{2}n\rfloor+1)^2+150(\lfloor\frac{1}{2}n\rfloor|+4|50n-50(\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor)^2+50 (\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor)|+16|50n+34-50(\lfloor\frac{1}{2}n\rfloor+1)^2+150(\lfloor\frac{1}{2}n\rfloor)|+16|50n-34-50(\lfloor\frac{1}{2}n\rfloor+ 1)^2+150(\lfloor\frac{1}{2}n\rfloor)|$$

Proof. Let G be a 1, 3, 5-Trihydroxybenzene Graph $[1,n]$ as shown in the figure 4. For $G[1,n]$ the number of edges corresponding to qoc's are given in the table 2. By using table 2, the edge version of Mostar index is given below.

Types of qoc's	Types of edges	No. of qoc's	No. of Edges	Peripherality of edges
C_1^1	e_1^1	3	$4n$	$\lvert 50n-16\rvert$
c_2^1	e_2^1	n	4	$\lvert 50n-50-100\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(i-1)\rvert$
c_2^2	e_2^2	$n-1$	2	$\lvert 50n-100\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor} i\rvert$
c_3^1	e_3^1	$2n$	4	$\lvert 50n-50-100\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(i-1)\rvert$
c_4^1	e_4^1	$2n$	4	$\lvert 50n-16-100\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(i-1)\rvert$
g c_4^2	e_4^2	$2n$	4	$\lvert 50n-50-100\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(i-1)\rvert$
c_4^3	e_4^3	$2n$	4	$\lvert 50n-84-100\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(i-1)\rvert$

TABLE 2. Edge partition of 1, 3, 5-Trihydroxybenzene Graph[1, n]

$$Mo_e(G) = \sum_{uv\varepsilon E(G)} |m_u - m_v|$$

$$= 2 \times 4n \times |50n - 16| + 2 \times 4 \times |50n - 50 - 100 \sum_{i=1}^{\lfloor \frac{n}{2} \rfloor} (i-1)| + 2 \times 2 \times |50n - 100 \sum_{i=1}^{\lfloor \frac{n-1}{2} \rfloor}$$

$$i| + 2 \times 2 \times 4 \times |50n - 50 - 100 \sum_{i=1}^{\lfloor \frac{n}{2} \rfloor} (i-1)| + 2 \times 2 \times 4 \times |50n - 16 - 100 \sum_{i=1}^{\lfloor \frac{n}{2} \rfloor} (i-1)|$$

$$+ 2 \times 2 \times 4 \times |50n - 50 - 100 \sum_{i=1}^{\lfloor \frac{n}{2} \rfloor} (i-1)| + 2 \times 2 \times 4 \times |50n - 84 - 100 \sum_{i=1}^{\lfloor \frac{n}{2} \rfloor} (i-1)|$$

$$= 8n|50n - 16| + 40|50n - 50(\lfloor \frac{1}{2}n \rfloor + 1)^2 + 150(\lfloor \frac{1}{2}n \rfloor| + 4|50n - 50(\lfloor \frac{1}{2}n + \frac{1}{2} \rfloor)^2 +$$

$$50(\lfloor \frac{1}{2}n + \frac{1}{2} \rfloor)| + 16|50n + 34 - 50(\lfloor \frac{1}{2}n \rfloor + 1)^2 + 150(\lfloor \frac{1}{2}n \rfloor)| + 16|50n - 34 - 50(\lfloor \frac{1}{2}n \rfloor$$

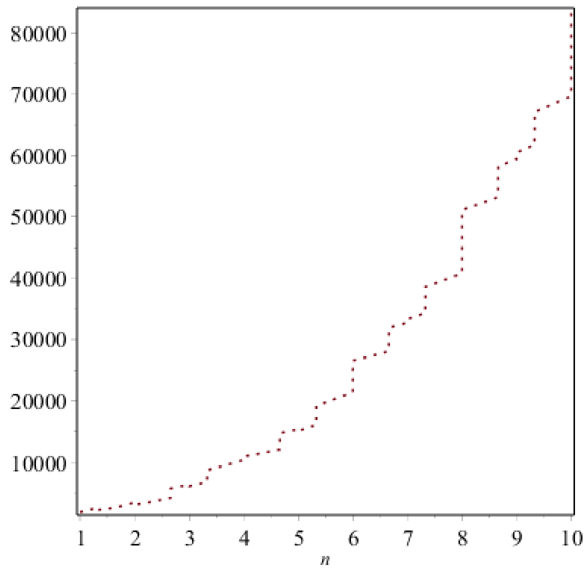
$$+ 1)^2 + 150(\lfloor \frac{1}{2}n \rfloor)|$$

□

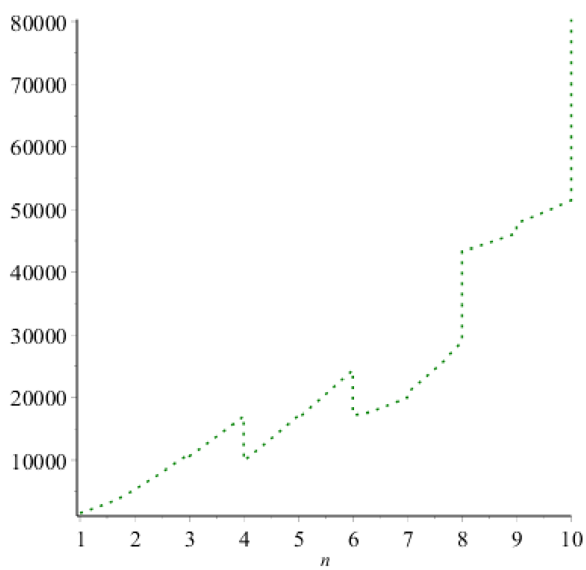
Now, we compute the values of mostar and edge version of Mostar indices by using formulas for different test values of n and for $m = 1$.

Test Values	$n = 5$	$n = 6$	$n = 7$	$n = 8$	$n = 9$	$n = 10$	$n = 11$	$n = 12$	13	14
$Mo(G)$	15120	26592	33360	51168	60528	83520	95472	123648	138192	171552
$Mo_e(G)$	16760	17232	20792	43376	47848	80320	86792	128064	136536	186608
Test Values	$n = 15$	$n = 16$	$n = 17$	$n = 18$	$n = 19$	$n = 20$	$n = 21$	$n = 22$	23	24
$Mo(G)$	188688	227232	246960	290688	313008	361920	386832	440928	468432	527712
$Mo_e(G)$	197080	255952	268424	336096	350568	427040	443512	528784	547256	641328

TABLE 3. Test values of 1, 3, 5-Trihydroxybenzene Graph[1, n]



Graphical Representation of Mostar index for m=1



Graphical Representation of edge Mostar index foe m=1

In second case, we discuss the graph G for $m \equiv 0(mod3), \forall n > m$. It has $24mn + 12n$ number of vertices and $36mn + 14n - 2m$ number of edges. In this case, we will consider three types of families of orthogonal cuts, horizontal, vertical and oblique. We will consider oblique orthogonal cuts twice due to the symmetry of the structure. Here, i represents the quasi-orthogonal cuts(qoc's) of the graph.

Theorem 3.3. *For a graph G of 1, 3, 5-Trihydroxybenzene* $[m \equiv 0(mod3), \forall n > m]$, *the Mostar index of the graph is,*

$$Mo(G) = 8n|24mn+12n-12(\lfloor m+\frac{1}{2}\rfloor+1)^2+36\lfloor m+\frac{1}{2}\rfloor)|+4|24mn+12n-72m-24(\lfloor\frac{1}{2} n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+(72(\lfloor\frac{1}{2}n\rfloor+1)m+36\lfloor\frac{1}{2}n\rfloor)|m+4|24mn+12n-72m- 24(\lfloor\frac{1}{2}n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+72(\lfloor\frac{1}{2}n\rfloor+1)m+36\lfloor\frac{1}{2}n\rfloor|+4m|-24mn-12n+ 6(\frac{1}{3}m+1)^2+\frac{14}{3}m+144\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m+72\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2-144\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m-72\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor| +\frac{8}{3}|24mn+12n-198-72(\lfloor\frac{1}{6}m\rfloor+1)^3+234(\lfloor\frac{1}{6}m\rfloor+1)^2-126\lfloor\frac{1}{6}m\rfloor|m^2-\frac{8}{3}|24mn +12n-198-72(\lfloor\frac{1}{6}m\rfloor+1)^3+234(\lfloor\frac{1}{6}m\rfloor+1)^2-126\lfloor\frac{1}{6}m\rfloor|m+\frac{8}{3}|24mn+12n-126 -72(\lfloor\frac{1}{6}m\rfloor+1)^3+162(\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m^2+\frac{8}{3}|24mn+12n-126-72(\lfloor\frac{1}{6}m\rfloor +1)^3+162(\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m+\frac{8}{3}|24mn+12n-54-72(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3 +90(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+8|24mn+12n-54-72(\lfloor\frac{1}{2}n -\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+90(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|24mn+12n -66-24(\lfloor\frac{1}{6}m\rfloor+1)^3+78(\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m^2+\frac{16}{9}|24mn+12n-24(\lfloor\frac{1}{6}m)\rfloor +1)^3+54\lfloor\frac{1}{6}m\rfloor+1)^2-36\lfloor\frac{1}{6}m\rfloor-30|m^2+\frac{8}{3}|24mn+12n-24(\lfloor\frac{1}{6}m\rfloor+1)^3+54(\lfloor\frac{1}{6} m\rfloor+1)^2-36\lfloor\frac{1}{6}m\rfloor-30|m+\frac{16}{9}|24mn+12n-66-24(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^3+30(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}|m^2+\frac{16}{3}|24mn+12n-66-24(\lfloor\frac{1}{2}n-\frac{1}{6}m +\frac{1}{2}\rfloor+1)^3+30(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|24mn+12n+3 -24(\lfloor(n-\frac{1}{3}m\rfloor+1)^3+9(\lfloor(n-\frac{1}{3}m\rfloor+1)^2+15\lfloor(n-\frac{1}{3}m\rfloor|m^2+8|24mn+12n+3 -24(\lfloor(n-\frac{1}{3}m\rfloor+1)^3+9(\lfloor(n-\frac{1}{3}m\rfloor+1)^2+15\lfloor n-\frac{1}{3}m\rfloor|m$$

Proof. Let G be a 1, 3, 5-Trihydroxybenzene Graph $[m,n]$. For $G[m \equiv 0(mod3), \forall n > m]$ the number of edges corresponding to qoc's are given in the table. By using table, the Mostar index is given below.

Types of qoc's	Types of edges	No. of qoc's	No. of edges	Peripherality of edges
C_1^1	e_1^1	$2m+1$	$4n$	$\lvert 24mn+12n-12-24\sum_{i=1}^{\lfloor\frac{2m+1}{2}\rfloor}(i-1)\rvert$
c_2^1	e_2^1	n	$2m+2$	$\lvert 24mn+12n-24m-12-\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(48im+24i-48m-24)\rvert$
c_2^2	e_2^2	$n-1$	$2m$	$\lvert 24mn+12n-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(48im+24i)\rvert$
c_3^j	e_3^j	4	$12j-8$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(216i^2-252i-36)\rvert$
c_3^{j+1}	e_3^{j+1}	4	$12j-4$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(216i^2-108i-24)\rvert$
c_3^m	e_3^m	$2n-2m+2$	$12j$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}(216i^2+36i-36)\rvert$
c_4^j	e_4^j	4	$8j-4$	$\lvert 24mn+12n-12-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(72i^2-84i+12)\rvert$
c_4^{j+1}	e_4^{j+1}	4	$8j-2$	$\lvert 24mn+12n-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(72i^2-36i+6)\rvert$
c_4^{j+2}	e_4^{j+2}	$2n-\frac{2m}{3}+2$	$8j$ -	$\lvert 24mn+12n-60-\sum_{i=1}^{\lfloor\frac{n-\frac{m}{3}+1}{2}\rfloor}(72i^2+12i-60)\rvert$
c_4^m	e_4^m	$4n-\frac{4m}{3}$	$8j+2$	$\lvert 24mn+12n-12-\sum_{i=1}^{\lfloor n-\frac{m}{3}\rfloor}(72i^2+54i)\rvert$
$For, 1\le j\le \frac{m}{3}$				

TABLE 4. Edge partition of 1, 3, 5-Trihydroxybenzene Graph$[m\equiv 0(mod3), \forall n>m]$

$$
\begin{aligned}
Mo(G) = & \sum_{uv\varepsilon E(G)} |n_u - n_v| \\
= & 2\times 4n|24mn+12n-12-24\sum_{i=1}^{\lfloor\frac{2m+1}{2}\rfloor}(i-1)|+2\times(2m+2)|24mn+12n-24m-12 \\
& -\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(48im+24i-48m-24)|+2\times 2m|24mn+12n-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(48im+24i)|+4\times\sum_{j=1}^{m/3}(\\
& 12j-8)\times|24mn+12n-36-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(216i^2-252i-36)|+4\times\sum_{j=1}^{m/3}(12j-4)\times|24mn+12n- \\
& 36-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(216i^2-108i-24)|+4\times 12\sum_{j=1}^{m/3}j\times|24mn+12n-36-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}(216i^2+36i-36| \\
& +4\times\sum_{j=1}^{m/3}(8j-4)\times|24mn+12n-12-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(72i^2-84i+12)|+4\times\sum_{j=1}^{m/3}(8j-2)\times|24mn+ \\
& 12n-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(72i^2-36i+6)|+4\times 8\sum_{j=1}^{m/3}j\times|24mn+12n-60-\sum_{i=1}^{\lfloor\frac{n-\frac{m}{3}+1}{2}\rfloor}(72i^2+12i-60)|+ \\
& 4\times\sum_{j=1}^{m/3}(8j+2)\times|24mn+12n-12-\sum_{i=1}^{\lfloor n-\frac{m}{3}\rfloor}(72i^2+54i)| \\
= & 8n|24mn+12n-12(\lfloor m+\frac{1}{2}\rfloor+1)^2+36\lfloor m+\frac{1}{2}\rfloor)|+4|24mn+12n-72m-24(\lfloor\frac{1}{2}n\rfloor+ \\
& 1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+(72(\lfloor\frac{1}{2}n\rfloor+1)m+36\lfloor\frac{1}{2}n\rfloor)|m+4|24mn+12n-72m-24(\lfloor\frac{1}{2}n\rfloor+ \\
& 1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+72(\lfloor\frac{1}{2}n\rfloor+1)m+36\lfloor\frac{1}{2}n\rfloor|+4m|-24mn-12n+6(\frac{1}{3}m+1)^2+\frac{14}{3} \\
& m+144\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m+72\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2-144\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m-72\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor|+\frac{8}{3}|24mn+12n-198 \\
& -72(\lfloor\frac{1}{6}m\rfloor+1)^3+234(\lfloor\frac{1}{6}m\rfloor+1)^2-126\lfloor\frac{1}{6}m\rfloor|m^2-\frac{8}{3}|24mn+12n-198-72(\lfloor\frac{1}{6}m\rfloor+1)^3 \\
& +234(\lfloor\frac{1}{6}m\rfloor+1)^2-126\lfloor\frac{1}{6}m\rfloor|m+\frac{8}{3}|24mn+12n-126-72(\lfloor\frac{1}{6}m\rfloor+1)^3+162(\lfloor\frac{1}{6}m\rfloor+1)^2 \\
& -66\lfloor\frac{1}{6}m\rfloor|m^2+\frac{8}{3}|24mn+12n-126-72(\lfloor\frac{1}{6}m\rfloor+1)^3+162(\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m+\frac{8}{3} \\
& |24mn+12n-54-72(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+90(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2} \\
& \rfloor|m^2+8|24mn+12n-54-72(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+90(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{1}{2}n- \\
& \frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|24mn+12n-66-24(\lfloor\frac{1}{6}m\rfloor+1)^3+78(\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m^2+\frac{16}{9}|24
\end{aligned}
$$

$$mn+12n-24(\lfloor\frac{1}{6}m)\rfloor+1)^3+54\lfloor\frac{1}{6}m\rfloor+1)^2-36\lfloor\frac{1}{6}m\rfloor-30|m^2+\frac{8}{3}|24mn+12n-24(\lfloor\frac{1}{6}m\rfloor$$
$$+1)^3+54(\lfloor\frac{1}{6}m\rfloor+1)^2-36\lfloor\frac{1}{6}m\rfloor-30|m+\frac{16}{9}|24mn+12n-66-24(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^3$$
$$+30(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}|m^2+\frac{16}{3}|24mn+12n-66-24(\lfloor\frac{1}{2}n-\frac{1}{6}m+$$
$$\frac{1}{2}\rfloor+1)^3+30(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|24mn+12n+3-24(\lfloor(n-$$
$$\frac{1}{3}m\rfloor+1)^3+9(\lfloor(n-\frac{1}{3}m\rfloor+1)^2+15\lfloor(n-\frac{1}{3}m\rfloor|m^2+8|24mn+12n+3-24(\lfloor(n-\frac{1}{3}m\rfloor+1)^3$$
$$+9(\lfloor(n-\frac{1}{3}m\rfloor+1)^2+15\lfloor n-\frac{1}{3}m\rfloor|m$$

□

Theorem 3.4. *For a graph G of 1, 3, 5-Trihydroxybenzene $[m\equiv 0(mod3),\forall n>m]$, the edge version of Mostar index of the graph G is,*

$$Mo_e(G)=8n|36mn-2m+14n-14|+8n|36mn-2m+4-18\lfloor m+\frac{1}{2}\rfloor^2n+18n\lfloor m+\frac{1}{2}\rfloor|$$
$$+4|36mn-36m+14n-36(\lfloor((\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+(36\lfloor\frac{1}{2}n\rfloor+1)m+42$$
$$\lfloor\frac{1}{2}n\rfloor m+4|36mn-36m+14n-36(\lfloor\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+36(\lfloor\frac{1}{2}n\rfloor+1)m$$
$$+42\lfloor\frac{1}{2}n\rfloor|+4m|36mn-4m+14n-34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m-18\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor$$
$$m+26\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor-8|+\frac{8}{3}|-36mn-\frac{8}{3}m-14n-28+6(\frac{1}{3}m+1)^2+108(\lfloor\frac{1}{6}m\rfloor+1)^3$$
$$-42\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m^2-\frac{8}{3}|-36mn-\frac{8}{3}m-14n-28+6(\frac{1}{3}m+1)^2+108(\lfloor$$
$$\frac{1}{6}m\rfloor+1)^3-42(\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m+\frac{8}{3}|-36mn-\frac{4}{3}m-14n+188+6(\frac{1}{3}m+$$
$$1)^2+108(\lfloor\frac{1}{6}m\rfloor+1)^3-258(\lfloor\frac{1}{6}m\rfloor+1)^2+134\lfloor\frac{1}{6}m\rfloor|m^2+\frac{8}{3}|-36mn-\frac{4}{3}m-14n+$$
$$188+6(\frac{1}{3}m+1)^2+108(\lfloor\frac{1}{6}m\rfloor+1)^3-258(\lfloor\frac{1}{6}m\rfloor+1)^2+134\lfloor\frac{1}{6}m\rfloor|m+\frac{8}{3}|-36mn$$
$$-14n+80+6(\frac{1}{3}m+1)^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-150(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2$$
$$-2\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+8|-36mn-14n+80+6(\frac{1}{3}m+1)^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor$$
$$+1)^3-150(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-2\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|-36mn-\frac{2}{3}m-14n$$
$$+96+4(\frac{1}{3}m+1)^2+36(\lfloor\frac{1}{6}m\rfloor+1)^3-126(\lfloor\frac{1}{6}m\rfloor+1)^2+126\lfloor\frac{1}{6}m\rfloor|m^2+\frac{16}{9}|-36mn$$

$$-14n-6+4(\frac{1}{3}m+1)^2+36(\lfloor\frac{1}{6}m\rfloor+1)^3+10(\lfloor\frac{1}{6}m\rfloor+1)^2-276\lfloor\frac{1}{6}m\rfloor|m^2+\frac{8}{3}|-36$$
$$mn-14n-6+4(\frac{1}{3}m+1)^2+36(\lfloor\frac{1}{6}m\rfloor+1)^3+10(\lfloor\frac{1}{6}m\rfloor+1)^2-276\lfloor\frac{1}{6}m\rfloor|m+\frac{16}{9}|-$$
$$36mn+\frac{2}{3}m-14n+92+4(\frac{1}{3}m+1)^2+36(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^3-54(\lfloor\frac{1}{2}n-\frac{1}{6}m+$$
$$\frac{1}{2}\rfloor+1)^2-60\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor|m^2+\frac{16}{3}|-36mn+\frac{2}{3}m-14n+92+4(\frac{1}{3}m+1)^2+36$$
$$(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^3-54(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^2-60\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|-36$$
$$mn+\frac{4}{3}m-14n-12+4(\frac{1}{3}m+1)^2+36(\lfloor(n-\frac{1}{3}m\rfloor+1)^3-18(\lfloor(n-\frac{1}{3}m\rfloor+1)^2-24$$
$$\lfloor(n-\frac{1}{3}m\rfloor|m^2+8|-36mn+\frac{4}{3}m-14n-12+4(\frac{1}{3}m+1)^2+36(\lfloor(n-\frac{1}{3}m\rfloor+1)^3-$$
$$18(\lfloor(n-\frac{1}{3}m\rfloor+1)^2-24\lfloor(n-\frac{1}{3}m\rfloor|m$$

Proof. Let G be a 1, 3, 5-Trihydroxybenzene Graph $[m,n]$. For $G[m\equiv 0(mod3),\forall n>m]$ the number of edges corresponding to qoc's are given in the table. By using table, the Edge Mostar index is given below.

Table 5: Edge partition of 1, 3, 5-Trihydroxybenzene Graph $[m\equiv 0\ (\text{mod}\ 3),\ \forall n>m]$

Types of qoc's	Types of edges	No. of qoc's	No. of edges	Peripherality of edges
C_1^1	e_1^1	2	$4n$	$\lvert 36mn+14n-2m-14\rvert$
C_1^2	e_1^2	$2m-1$	$4n$	$\lvert 36mn-2m+4-\sum_{i=1}^{\lfloor\frac{2m-1}{2}\rfloor}36ni\rvert$
c_2^1	e_2^1	n	$2m+2$	$\lvert 36mn+14n-36m-14-\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(72mi+28i-28)\rvert$
c_2^2	e_2^2	$n-1$	$2m$	$\lvert 36mn+14n-4m-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(68mi+36i-8)\rvert$
c_3^j	e_3^j	4	$12j-8$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{m/3}(12j-8)-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(324i^2+240i)\rvert$

Types of qoc's	Types of edges	No. of qoc's	No. of edges	Peripherality of edges
c_3^{j+1}	e_3^{j+1}	4	$12j-4$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{m/3}(12j-4)-\sum_{i=1}^{\lfloor \frac{m}{6}\rfloor}(324i^2-192i-16)\rvert$
c_3^{m}	e_3^{m}	$2n-2m+2$	$12j$	$\lvert 36mn+14n-2m-44-12\sum_{j=1}^{m/3}j-\sum_{i=1}^{\frac{n-m+1}{2}}(324i^2+24i-44)\rvert$
c_4^{j}	e_4^{j}	4	$8j-4$	$\lvert 36mn+14n-2m-10-\sum_{j=1}^{m/3}(8j-4)-\sum_{i=1}^{\lfloor \frac{m}{6}\rfloor}(108i^2-144i+36)\rvert$
c_4^{j+1}	e_4^{j+1}	4	$8j-2$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{m/3}(8j-2)-\sum_{i=1}^{\lfloor \frac{m}{6}\rfloor}(108i^2+128i-230)\rvert$
c_4^{j+2}	e_4^{j+2}	$2n-\frac{2m}{3}+2$	$8j$	$\lvert 36mn+14n-2m-78-8\sum_{j=1}^{m/3}j-\sum_{i=1}^{\lfloor \frac{n-\frac{m}{3}+1}{2}\rfloor}(108i^2-78)\rvert$
c_4^{m}	e_4^{m}	$4n-\frac{4m}{3}$	$8j+2$	$\lvert 36mn+14n-2m-10-\sum_{j=1}^{m/3}(8j+2)-\sum_{i=1}^{\lfloor n-\frac{m}{3}\rfloor}(108i^2+72i-6)\rvert$
For $1\leq j\leq \frac{m}{3}$				

$$Mo_e(G)=\sum_{e=uv\varepsilon E(G)}|m_u-m_v|$$

$$=2\times 4n\times|36mn+14n-2m-14|+2\times 4n\times|36mn-2m+4-\sum_{i=1}^{\lfloor\frac{2m-1}{2}\rfloor}36ni|+2\times$$

$$(2m+2)\times|36mn+14n-36m-14-\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(72mi+28i-28)|+2\times 2m\times|36mn+14n$$

$$-4m-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(68mi+36i-8)|+4\times\sum_{j=1}^{m/3}(12j-8)\times|36mn+14n-2m-44-\sum_{j=1}^{m/3}(12$$

$$j-8)-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(324i^2+240i)|+4\times\sum_{j=1}^{m/3}(12j-4)|36mn+14n-2m-44-\sum_{j=1}^{m/3}(12j-4)-$$

$$\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(324i^2-192i-16)|+4\times 12\sum_{j=1}^{m/3}j\times|36mn+14n-2m-44-12\sum_{j=1}^{m/3}j-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}$$

$$(324i^2+24i-44)|+4\times\sum_{j=1}^{m/3}(8j-4)|36mn+14n-2m-10-\sum_{j=1}^{m/3}(8j-4)-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(108i^2$$

$$-144i+36)|+4\times\sum_{j=1}^{m/3}(8j-2)|36mn+14n-2m-44-\sum_{j=1}^{m/3}(8j-2)-\sum_{i=1}^{\lfloor\frac{m}{6}\rfloor}(108i^2+$$

$$128i-230)|+4\times 8\sum_{j=1}^{m/3}j\times|36mn+14n-2m-78-8\sum_{j=1}^{m/3}j-\sum_{i=1}^{\lfloor\frac{n-\frac{m}{3}+1}{2}\rfloor}(108i^2-78)|$$

$$+4\times\sum_{j=1}^{m/3}(8j+2)|36mn+14n-2m-10-\sum_{j=1}^{m/3}(8j+2)-\sum_{i=1}^{\lfloor n-\frac{m}{3}\rfloor}(108i^2+72i-6)|$$

$$=8n|36mn-2m+14n-14|+8n|36mn-2m+4-18\lfloor m+\frac{1}{2}\rfloor^2n+18n\lfloor m+\frac{1}{2}\rfloor|$$

$$+4|36mn-36m+14n-36(\lfloor((\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+(36\lfloor\frac{1}{2}n\rfloor+1)m+42$$

$$\lfloor\frac{1}{2}n\rfloor m+4|36mn-36m+14n-36(\lfloor\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+36(\lfloor\frac{1}{2}n\rfloor+1)m$$

$$+42\lfloor\frac{1}{2}n\rfloor|+4m|36mn-4m+14n-34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m-18\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m$$

$$+26\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor-8|+\frac{8}{3}|-36mn-\frac{8}{3}m-14n-28+6(\frac{1}{3}m+1)^2+108(\lfloor\frac{1}{6}m\rfloor+1)^3-$$

$$42\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m^2-\frac{8}{3}|-36mn-\frac{8}{3}m-14n-28+6(\frac{1}{3}m+1)^2+108(\lfloor\frac{1}{6}m\rfloor$$

$$+1)^3-42(\lfloor\frac{1}{6}m\rfloor+1)^2-66\lfloor\frac{1}{6}m\rfloor|m+\frac{8}{3}|-36mn-\frac{4}{3}m-14n+188+6(\frac{1}{3}m+1)^2+$$

$$108(\lfloor\frac{1}{6}m\rfloor+1)^3-258(\lfloor\frac{1}{6}m\rfloor+1)^2+134\lfloor\frac{1}{6}m\rfloor|m^2+\frac{8}{3}|-36mn-\frac{4}{3}m-14n+188+6$$

$$(\frac{1}{3}m+1)^2+108(\lfloor\frac{1}{6}m\rfloor+1)^3-258(\lfloor\frac{1}{6}m\rfloor+1)^2+134\lfloor\frac{1}{6}m\rfloor|m+\frac{8}{3}|-36mn-14n+80+6(\frac{1}{3}$$

$$m+1)^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-150(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-2\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+8$$

$$|-36mn-14n+80+6(\frac{1}{3}m+1)^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-150(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2$$

$$-2\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|-36mn-\frac{2}{3}m-14n+96+4(\frac{1}{3}m+1)^2+36(\lfloor\frac{1}{6}m\rfloor+1)^3-126$$

$$(\lfloor\frac{1}{6}m\rfloor+1)^2+126\lfloor\frac{1}{6}m\rfloor|m^2+\frac{16}{9}|-36mn-14n-6+4(\frac{1}{3}m+1)^2+36(\lfloor\frac{1}{6}m\rfloor+1)^3+10(\lfloor\frac{1}{6}$$

$$m\rfloor+1)^2-276\lfloor\frac{1}{6}m\rfloor|m^2+\frac{8}{3}|-36mn-14n-6+4(\frac{1}{3}m+1)^2+36(\lfloor\frac{1}{6}m\rfloor+1)^3+10(\lfloor\frac{1}{6}m\rfloor$$

$$+1)^2-276\lfloor\frac{1}{6}m\rfloor|m+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+92+4(\frac{1}{3}m+1)^2+36(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^3$$

$$-54(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^2-60\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor|m^2+\frac{16}{3}|-36mn+\frac{2}{3}m-14n+92+4(\frac{1}{3}m$$

$$+1)^2+36(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^3-54(\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor+1)^2-60\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|-$$

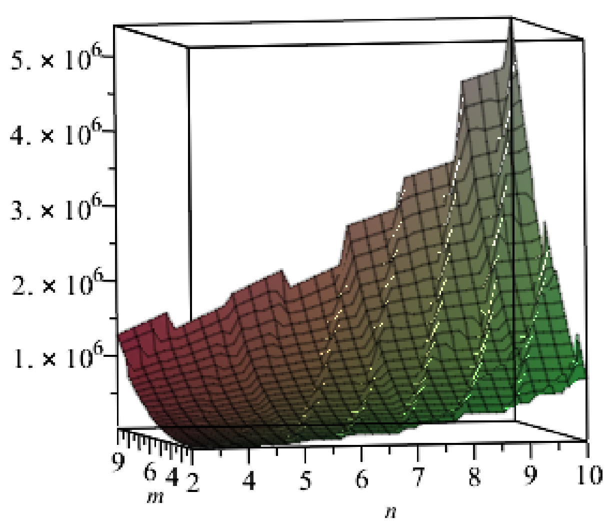
$$36mn+\frac{4}{3}m-14n-12+4(\frac{1}{3}m+1)^2+36(\lfloor(n-\frac{1}{3}m\rfloor+1)^3-18(\lfloor(n-\frac{1}{3}m\rfloor+1)^2-24\lfloor(n-\frac{1}{3}m\rfloor|m^2+8|-36mn+\frac{4}{3}m-14n-12+4(\frac{1}{3}m+1)^2+36(\lfloor(n-\frac{1}{3}m\rfloor+1)^3-18(\lfloor(n-\frac{1}{3}m\rfloor+1)^2-24\lfloor(n-\frac{1}{3}m\rfloor|m$$

□

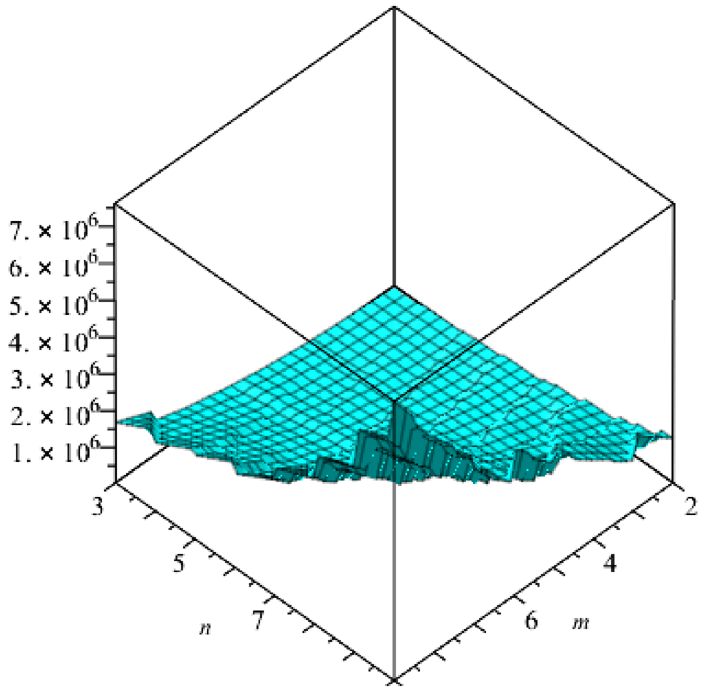
We compute the values of Mostar and edge version of Mostar indices for different test values of n and m(For, $n > m$).

Test values	$m=3$ $n=5$	$m=6$ $n=7$	$m=9$ $n=11$	$m=12$ $n=13$	$m=15$ $n=17$	$m=18$ $n=19$
$Mo(G)$	185304	1184784	7243656	17025792	50539992	89062992
$Mo_e(G)$	227336	1540016	9890904	23013744	70066760	122459104

TABLE 6. Test values of 1, 3, 5-Trihydroxybenzene Graph[$m \equiv 0(mod 3), \forall n > m$]



Graphical Representation of Mostar index for [m≡0(mod 3), n >m]



Graphical Representation of edge Mostar index for [m≡0(mod 3), n > m]

In the third case, let G be a graph of 1, 3, 5-Trihydroxybenzene $[m \equiv 1(mod3), \forall n > m]$. It has $24mn+12n$ number of vertices and $36mn+14n-2m$ number of edges. In this case, we will consider three types of families of orthogonal cuts, horizontal, vertical and oblique. We will consider oblique orthogonal cuts twice due to the symmetry of the structure.

Theorem 3.5. *Let G be a graph of 1, 3, 5-Trihydroxybenzene* $[m \equiv 1(mod3), \forall n > m]$*. Then, the Mostar index of the Graph G is,*

$$Mo(G) = 4|24mn-72m+12n-24(\lfloor\frac{1}{2}n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+72(\lfloor\frac{1}{2}n\rfloor+1)m+36\lfloor\frac{1}{2}n\rfloor|+\frac{8}{3}|24mn+12n-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+234\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-198\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2-8|24mn+12n-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+234\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-198\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{8}{3}|24mn+12n-60-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+162\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-66\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2-\frac{8}{3}|24mn+12n-60-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+162\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-66\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{8}{3}|24mn+12n-72-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{8}{3}|24mn+12n-72-72\lfloor\frac{1}{6}m+\frac{5}{6})\rfloor^3+90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{8}{3}|24mn+12n+18-72(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+18(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+$$

$$54\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+8|24mn+12n+18-72(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+18(\lfloor\frac{1}{2}n-\frac{1}{2}$$

$$m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|24mn+12n-144-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+6\lfloor\frac{1}{6}m$$

$$+\frac{5}{6}\rfloor^2+150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2-\frac{32}{9}|24mn+12n-144-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+6\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+$$

$$150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{16}{9}|24mn+12n-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor+6$$

$$|m^2-\frac{8}{9}|24mn+12n-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor+6|m+\frac{16}{9}|24mn$$

$$+12n-120-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{16}{9}|24mn+12n-$$

$$120-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor\frac{1}{6}m+\frac{5}{6})\rfloor|m+\frac{16}{9}|24mn+12n+6-24(\lfloor\frac{3}{2}n$$

$$-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+6(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+\frac{64}{9}|24mn+12n$$

$$+6-24(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+6(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{16}{3}$$

$$|24mn+12n-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+234\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-198\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{16}{3}|24mn+12n-72$$

$$-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{32}{3}|24mn+12n+18-72(\lfloor\frac{1}{2}n-\frac{1}{2}$$

$$m+\frac{1}{2}\rfloor+1)^3+18(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+\frac{16}{9}|24mn+12n-144$$

$$-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+6\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{8}{9}|24mn+12n-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+54$$

$$\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor+6)-\frac{32}{9}|24mn+12n-120-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{6}m+\frac{5}{6}$$

$$\rfloor^2+54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{80}{9}|24mn+12n+6-24(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+6(\lfloor\frac{3}{2}n-\frac{1}{2}m+$$

$$\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+4|24mn-72m+12n-24(\lfloor\frac{1}{2}n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+$$

$$1)^2+(72(\lfloor\frac{1}{2}n\rfloor+1)|m+36|\lfloor\frac{1}{2}n\rfloor|m+4m|24mn+12n-24\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m-12\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2$$

$$+24\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m+12\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor|+8n|24mn+12n-12(\lfloor m+\frac{1}{2}\rfloor+1)^2+36\lfloor m+\frac{1}{2}\rfloor|$$

Table 7: Edge partition of 1, 3, 5-Trihydroxybenzene Graph $[m \equiv 1 \pmod 3),\ \forall n > m]$

Types of qoc's	*Types of edges*	*No. of qoc's*	*No. of edges*	*Peripherality of edges*
C_1^1	e_1^1	$2m+1$	$4n$	$\lvert 24mn+12n-12-24\sum_{i=1}^{\lfloor\frac{2m+1}{2}\rfloor}(i-1)\rvert$
c_2^1	e_2^1	n	$2m+2$	$\lvert 24mn+12n-24m-12-\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(48im+24i-48m-24)\rvert$
c_2^2	e_2^2	$n-1$	$2m$	$\lvert 24mn+12n-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(48im+24i)\rvert$
c_3^j	e_3^j	4	$12j-8$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(216i^2-252i+36)\rvert$
c_3^{j+1}	e_3^{j+1}	4	$12j-4$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(216i^2-108i-24)\rvert$
c_3^{j+2}	e_3^{j+2}	4	$12j$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(216i^2+36i-36)\rvert$
c_3^m	e_3^m	$2n-2m+2$	$12j+4$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}(216i^2+180i)\rvert$
c_4^j	e_4^j	4	$8j-4$	$\lvert 24mn+12n-12-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(72i^2+60i-132)\rvert$
c_4^{j+1}	e_4^{j+1}	4	$8j-2$	$\lvert 24mn+12n-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(72i^2-36i+6)\rvert$
c_4^{j+2}	e_4^{j+2}	4	$8j$	$\lvert 24mn+12n-60-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(72i^2+12i-60)\rvert$
c_4^m	e_4^m	$6n-2m+2$	$8j+4$	$\lvert 24mn+12n-12-\sum_{i=1}^{\lfloor\frac{3n-m+1}{2}\rfloor}(72i^2+60i)\rvert$
For $1 \le j \le \frac{m-1}{3}$				

Proof. Let G be a 1, 3, 5-Trihydroxybenzene Graph $[m \equiv 1(mod3), \forall n > m]$. For $G[m,n]$ the number of edges corresponding to qocs are given in the table. Here, i represents the quasi-ortogonal cuts(qoc's) of the graph. By using table, the Mostar index is given below.

$$Mo(G) = \sum_{uv\varepsilon E(G)} |n_u - n_v|$$

$$= 2 \times 4n \times |24mn + 12n - 12 - 24 \sum_{1}^{\lfloor \frac{2m+1}{2} \rfloor} (i-1)| + 2 \times (2m+2) \times |24mn + 12n - 24$$

$$m - 12 - \sum_{i=1}^{\lfloor \frac{n}{2} \rfloor} (48mi + 24i - 48m - 24)| + 2 \times 2m \times |24mn + 12n - \sum_{i=1}^{\lfloor \frac{n-1}{2} \rfloor} (48mi + 24i)|$$

$$+ 4 \times \sum_{j=1}^{(m-1)/3} (12j - 8) \times |24mn + 12n - 36 - \sum_{i=1}^{\lfloor \frac{m-1}{6} \rfloor} (216i^2 - 252i + 36)| + 4 \times \sum_{j=1}^{(m-1)/3} ($$

$$12j - 4) \times |24mn + 12n - 36 - \sum_{i=1}^{\lfloor \frac{m-1}{6} \rfloor} (216i^2 - 108i - 24)| + 4 \times (12 \sum_{j=1}^{(m-1)/3} j) \times |24mn$$

$$+ 12n - 36 - \sum_{i=1}^{\lfloor \frac{m-1}{6} \rfloor} (216i^2 + 36i - 36)| + 4 \times \sum_{j=1}^{(m-1)/3} (12j + 4) \times |24mn + 12n - 36 -$$

$$\sum_{i=1}^{\lfloor \frac{n-m+1}{2} \rfloor} (216i^2 + 180i)| + 4 \times \sum_{j=1}^{(m-1)/3} (8j - 4) \times |24mn + 12n - 12 - \sum_{i=1}^{\lfloor \frac{m-1}{6} \rfloor} (72i^2 + 60i$$

$$- 132)| + 4 \times \sum_{j=1}^{(m-1)/3} (8j - 2) \times |24mn + 12n - \sum_{i=1}^{\lfloor \frac{m-1}{6} \rfloor} (72i^2 - 36i + 6)| + 4 \times 8 \sum_{j=1}^{(m-1)/3}$$

$$j \times |24mn + 12n - 60 - \sum_{i=1}^{\lfloor \frac{m-1}{6} \rfloor} (72i^2 + 12i - 60)| + 4 \times \sum_{j=1}^{(m-1)/3} (8j + 4) \times |24mn + 12n$$

$$- 12 - \sum_{i=1}^{\lfloor \frac{3n-m+1}{2} \rfloor} (72i^2 + 60i)|$$

$$= 4|24mn - 72m + 12n - 24(\lfloor \frac{1}{2}n \rfloor + 1)^2 m - 12(\lfloor \frac{1}{2}n \rfloor + 1)^2 + 72(\lfloor \frac{1}{2}n \rfloor + 1)m + 36\lfloor \frac{1}{2}$$

$$n \rfloor| + \frac{8}{3}|24mn + 12n - 72\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^3 + 234\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^2 - 198\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor|m^2 - 8|24mn +$$

$$12n - 72\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^3 + 234\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^2 - 198\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor|m + \frac{8}{3}|24mn + 12n - 60 - 72\lfloor \frac{1}{6}$$

$$m + \frac{5}{6} \rfloor^3 + 162\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^2 - 66\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor|m^2 - \frac{8}{3}|24mn + 12n - 60 - 72\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^3 +$$

$$162\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^2 - 66\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor|m + \frac{8}{3}|24mn + 12n - 72 - 72\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^3 + 90\lfloor \frac{1}{6}m + \frac{5}{6} \rfloor^2$$

$$+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{8}{3}|24mn+12n-72-72\lfloor\frac{1}{6}m+\frac{5}{6})\rfloor^3+90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m$$

$$+\frac{8}{3}|24mn+12n+18-72(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+18(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}n-\frac{1}{2}m$$

$$+\frac{1}{2}\rfloor|m^2+8|24mn+12n+18-72(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+18(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}$$

$$n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{16}{9}|24mn+12n-144-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+6\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2-$$

$$\frac{32}{9}|24mn+12n-144-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+6\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{16}{9}|24mn+12n-$$

$$24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor+6|m^2-\frac{8}{9}|24mn+12n-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+54\lfloor\frac{1}{6}$$

$$m+\frac{5}{6}\rfloor^2-36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor+6|m+\frac{16}{9}|24mn+12n-120-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor$$

$$\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{16}{9}|24mn+12n-120-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor\frac{1}{6}m+\frac{5}{6})\rfloor|m+\frac{16}{9}$$

$$|24mn+12n+6-24(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+6(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2$$

$$+\frac{64}{9}|24mn+12n+6-24(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+6(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{3}{2}n-\frac{1}{2}m$$

$$+\frac{1}{2}\rfloor|m+\frac{16}{3}|24mn+12n-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+234\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-198\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{16}{3}|24mn+12n$$

$$-72-72\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{32}{3}|24mn+12n+18-72(\lfloor\frac{1}{2}n-\frac{1}{2}m+$$

$$\frac{1}{2}\rfloor+1)^3+18(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+54\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+\frac{16}{9}|24mn+12n-144-24\lfloor\frac{1}{6}m$$

$$+\frac{5}{6}\rfloor^3+6\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{8}{9}|24mn+12n-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-36$$

$$\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor+6)-\frac{32}{9}|24mn+12n-120-24\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{80}{9}$$

$$|24mn+12n+6-24(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+6(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|$$

$$+4|24mn-72m+12n-24(\lfloor\frac{1}{2}n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+(72(\lfloor\frac{1}{2}n\rfloor+1)|m+36|\lfloor\frac{1}{2}n\rfloor|m$$

$$+4m|24mn+12n-24\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m-12\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+24\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m+12\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor|+8n|24m$$

$$n+12n-12(\lfloor m+\frac{1}{2}\rfloor+1)^2+36\lfloor m+\frac{1}{2}\rfloor|$$

$\square$

Theorem 3.6. *Let G be a graph of 1, 3, 5-Trihydroxybenzene $[m \equiv 1(mod3), \forall n > m]$. Then, the edge version of Mostar index of the graph G is,*

$$Mo_e(G) = 8n|36mn-2m+14n-14|+4|36mn-36m+14n-36(\lfloor\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+36(\lfloor\frac{1}{2}n\rfloor+1)m+42\lfloor\frac{1}{2}n\rfloor|m+8|-36mn+\frac{4}{3}m-14n-\frac{82}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-42(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-66\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{8}{3}|-36mn-\frac{8}{3}m-14n-\frac{124}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-366\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+342\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+(\frac{16}{9}|-36mn-\frac{2}{3}m-14n-\frac{82}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{16}{9}|-36mn+2m-14n-12+4(\frac{1}{3}m+\frac{2}{3})^2+36(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-18(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+\frac{16}{9}|-36mn-14n+78+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+4|36mn-36m+14n-36(\lfloor(\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+(36(\lfloor\frac{1}{2}n\rfloor+1))m+42\lfloor\frac{1}{2}n\rfloor|+\frac{8}{3}|-36mn-14n+84+6\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-2\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m-\frac{32}{9}|-36mn-\frac{2}{3}m-14n-\frac{82}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6})^3-126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+\frac{460}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-60\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m-8|-36mn-\frac{8}{3}m-14n-\frac{124}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-366\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+342\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m-\frac{8}{9}|-36mn-14n+78+4(\frac{1}{3}m+\frac{2}{3}\rfloor^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{64}{9}|-36mn+2m-14n-12+4(\frac{1}{3}m+\frac{2}{3})^2+36(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-18(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{8}{3}|-36mn+\frac{4}{3}m-14n-\frac{82}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-42(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-66\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+\frac{460}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-60\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+8n|36mn-2m+4-18\lfloor m+\frac{1}{2}\rfloor^2n+18n\lfloor m+\frac{1}{2}\rfloor|+\frac{8}{3}|-36mn-14n+84+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-150\lfloor\frac{1}{6}m+\frac{5}{6})\rfloor^2-2\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{8}{3}|-36mn-\frac{4}{3}m-14n+\frac{172}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-258\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+134\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+4m|36mn-4m+14n-34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m-18\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m+26\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor-$$

$8|+\frac{16}{3}|-36mn-\frac{8}{3}m-14n-\frac{124}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-366\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+342\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{16}{3}|-36mn-14n+84+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-2\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{80}{9}|-36mn+2m-14n-12+4(\frac{1}{3}m+\frac{2}{3})^2+36(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-18(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|-\frac{32}{3}|-36mn+\frac{4}{3}m-14n-\frac{82}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-42(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-66\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+\frac{16}{9}|-36mn-\frac{2}{3}m-14n-\frac{82}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{8}{9}|-36mn-14n+78+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor(\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{32}{9}|-36mn+\frac{2}{3}m-14n+\frac{460}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-54\lfloor(\frac{1}{6}m+\frac{5}{6}\rfloor^2-60\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{8}{3}|-36mn-\frac{4}{3}m-14n+\frac{172}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-258\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+134\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m$

Table 8: Edge partition of 1, 3, 5-Trihydroxybenzene Graph $[m \equiv 1 \pmod 3),\ \forall n > m]$

Types of qoc's	*Types of edges*	*No. of qoc's*	*No. of edges*	*Peripherality of edges*
C_1^1	e_1^1	2	$4n$	$\lvert 36mn+14n-2m-14\rvert$
C_1^2	e_1^2	$2m-1$	$4n$	$\lvert 36mn-2m+4-\sum_{i=1}^{\lfloor\frac{2m-1}{2}\rfloor} 36ni\rvert$
c_2^1	e_2^1	n	$2m+2$	$\lvert 36mn+14n-36m-14-\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(72mi+28i-28)\rvert$
c_2^2	e_2^2	$n-1$	$2m$	$\lvert 36mn+14n-4m-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(68mi+36i-8)\rvert$
c_3^j	e_3^j	4	$12j-8$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{(m-1)/3}(12j-8)-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(324i^2-408i+84)\rvert$
c_3^{j+1}	e_3^{j+1}	4	$12j-4$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{(m-1)/3}(12j-4)-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(324i^2-192i-16)\rvert$

Types of qoc's	*Types of edges*	*No. of qoc's*	*No. of edges*	*Peripherality of edges*
c_3^{j+2}	e_3^{j+2}	4	$12j$	$\lvert 36mn+14n-2m-44-12\sum_{j=1}^{(m-1)/3} j-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(324i^2+24i-44)\rvert$
c_3^m	e_3^m	$2n-2m+2$	$12j+4$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{(m-1)/3}(12j+4)-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}(324i^2+240i)\rvert$
c_4^j	e_4^j	4	$8j-4$	$\lvert 36mn+14n-2m-10-\sum_{j=1}^{(m-1)/3}(8j-4)-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(108i^2-144i+36)\rvert$
c_4^{j+1}	e_4^{j+1}	4	$8j-2$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{(m-1)/3}(8j-2)-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(108i^2-72i-36)\rvert$
c_4^{j+2}	e_4^{j+2}	4	$8j$	$\lvert 36mn+14n-2m-78-8\sum_{j=1}^{(m-1)/3} j-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(108i^2-78)\rvert$
c_4^m	e_4^m	$6n-2m+2$	$8j+4$	$\lvert 36mn+14n-2m-10-\sum_{j=1}^{(m-1)/3}(8j+4)-\sum_{i=1}^{\lfloor\frac{3n-m+1}{2}\rfloor}(108i^2+72i)\rvert$
For $1\leq j\leq \frac{m-1}{3}$				

Proof. Let G be a 1, 3, 5-Trihydroxybenzene Graph $[m,n]$. For $G[m\equiv 1(mod3),\forall n>m]$ the number of edges corresponding to qocs are given in the table. By using table, the Edge Mostar index is given below.

$$Mo_e(G)=\sum_{e=uv\varepsilon E(G)}|m_u-m_v|$$

$$=2\times 4n\times|36mn+14n-2m-14|+2\times 4n\times|36mn-2m+4-\sum_{i=1}^{\lfloor\frac{2m-1}{2}\rfloor}36ni|+2\times$$

$$(2m+2)\times|36mn+14n-36m-14-\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(72mi+28i-28)|+2\times 2m\times|36mn+14$$

$$n-4m-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(68mi+36i-8)|+4\times\sum_{j=1}^{(m-1)/3}(12j-8)\times|36mn+14n-2m-44-$$

$$\sum_{j=1}^{(m-1)/3}(12j-8)-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(324i^2-408i+84)|+4\times\sum_{j=1}^{(m-1)/3}(12j-4)\times|36mn+14n-$$

$$2m-44-\sum_{j=1}^{(m-1)/3}(12j-4)-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(324i^2-192i-16)|+4\times12\sum_{j=1}^{(m-1)/3}j\times|36mn+$$

$$14n-2m-44-12\sum_{j=1}^{(m-1)/3}j-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(324i^2+24i-44)|+4\times\sum_{j=1}^{(m-1)/3}(12j+4)\times|36$$

$$mn+14n-2m-44-\sum_{j=1}^{(m-1)/3}(12j+4)-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}(324i^2+240i)|+4\times\sum_{j=1}^{(m-1)/3}(8j-$$

$$4)\times|36mn+14n-2m-10-\sum_{j=1}^{(m-1)/3}(8j-4)-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(108i^2-144i+36)|+4\times$$

$$\sum_{j=1}^{(m-1)/3}(8j-2)\times|36mn+14n-2m-44-\sum_{j=1}^{(m-1)/3}(8j-2)-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(108i^2-72i$$

$$-36)|+4\times(8\sum_{j=1}^{(m-1)/3}j\times|36mn+14n-2m-78-8\sum_{j=1}^{(m-1)/3}j-\sum_{i=1}^{\lfloor\frac{m-1}{6}\rfloor}(108i^2-78)|$$

$$+4\times\sum_{j=1}^{(m-1)/3}(8j+4)\times|36mn+14n-2m-10-\sum_{j=1}^{(m-1)/3}(8j+4)-\sum_{i=1}^{\lfloor\frac{3n-m+1}{2}\rfloor}(108i^2+72i)|$$

$$=8n|36mn-2m+14n-14|+4|36mn-36m+14n-36(\lfloor\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2$$

$$+36(\lfloor\frac{1}{2}n\rfloor+1)m+42\lfloor\frac{1}{2}n\rfloor|m+8|-36mn+\frac{4}{3}m-14n-\frac{82}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108(\lfloor\frac{1}{2}n-$$

$$\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-42(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-66\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{8}{3}|-36mn-\frac{8}{3}m-$$

$$14n-\frac{124}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-366\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+342\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+(\frac{16}{9}|-$$

$$36mn-\frac{2}{3}m-14n-\frac{82}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|$$

$$m^2+\frac{16}{9}|-36mn+2m-14n-12+4(\frac{1}{3}m+\frac{2}{3})^2+36(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-18(\lfloor\frac{3}{2}n-$$

$$\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+\frac{16}{9}|-36mn-14n+78+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}$$

$$m+\frac{5}{6}\rfloor^3-90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+4|36mn-36m+14n-36(\lfloor(\frac{1}{2}n\rfloor+1)^2m-$$

$$14(\lfloor\frac{1}{2}n\rfloor+1)^2+(36(\lfloor\frac{1}{2}n\rfloor+1))m+42\lfloor\frac{1}{2}n\rfloor|+\frac{8}{3}|-36mn-14n+84+6\frac{1}{3}m+\frac{2}{3})^2+108$$

$$\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-2\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m-\frac{32}{9}|-36mn-\frac{2}{3}m-14n-\frac{82}{3}+4(\frac{1}{3}m+$$

$$\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6})^3-126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+\frac{460}{3}$$

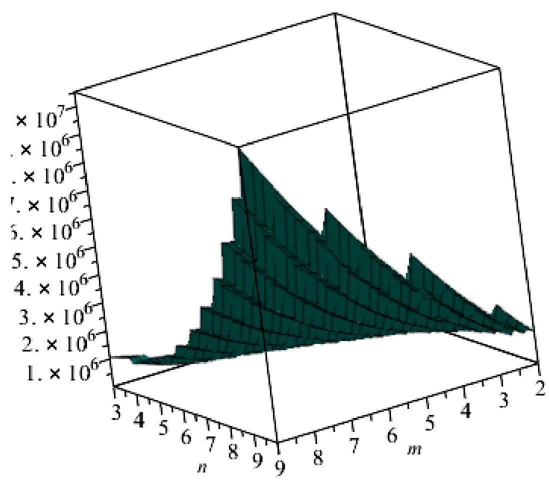
$$+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-60\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m-8|-36mn-\frac{8}{3}m-14n$$
$$-\frac{124}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-366\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+342\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m-\frac{8}{9}|-36mn-$$
$$14n+78+4(\frac{1}{3}m+\frac{2}{3}\rfloor^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{64}{9}|-36mn+$$
$$2m-14n-12+4(\frac{1}{3}m+\frac{2}{3})^2+36(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-18(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-18$$
$$\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{8}{3}|-36mn+\frac{4}{3}m-14n-\frac{82}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+$$
$$1)^3-42(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-66\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+\frac{460}{3}$$
$$+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-54\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-60\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+8n|36mn-2m+4-$$
$$18\lfloor m+\frac{1}{2}\rfloor^2n+18n\lfloor m+\frac{1}{2}\rfloor|+\frac{8}{3}|-36mn-14n+84+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-$$
$$150\lfloor\frac{1}{6}m+\frac{5}{6})\rfloor^2-2\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{8}{3}|-36mn-\frac{4}{3}m-14n+\frac{172}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108$$
$$\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-258\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+134\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+4m|36mn-4m+14n-34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2$$
$$m-18\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m+26\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor-8|+\frac{16}{3}|-36mn-\frac{8}{3}m-14n-\frac{124}{3}$$
$$+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-366\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+342\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{16}{3}|-36mn-14n+84$$
$$+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3-150\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2-2\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{80}{9}|-36mn+2m-14n-$$
$$12+4(\frac{1}{3}m+\frac{2}{3})^2+36(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-18(\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-18\lfloor\frac{3}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|$$
$$-\frac{32}{3}|-36mn+\frac{4}{3}m-14n-\frac{82}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-42(\lfloor\frac{1}{2}n-\frac{1}{2}m$$
$$+\frac{1}{2}\rfloor+1)^2-66\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+\frac{16}{9}|-36mn-\frac{2}{3}m-14n-\frac{82}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+$$
$$\frac{5}{6}\rfloor^3-126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+126\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{8}{9}|-36mn-14n+78+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^3$$
$$-90\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+18\lfloor(\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{32}{9}|-36mn+\frac{2}{3}m-14n+\frac{460}{3}+4(\frac{1}{3}m+\frac{2}{3})^2+36\lfloor\frac{1}{6}m+$$
$$\frac{5}{6}\rfloor^3-54\lfloor(\frac{1}{6}m+\frac{5}{6}\rfloor^2-60\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|-\frac{8}{3}|-36mn-\frac{4}{3}m-14n+\frac{172}{3}+6(\frac{1}{3}m+\frac{2}{3})^2+108\lfloor\frac{1}{6}m$$
$$+\frac{5}{6}\rfloor^3-258\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor^2+134\lfloor\frac{1}{6}m+\frac{5}{6}\rfloor|mh$$

$\square$

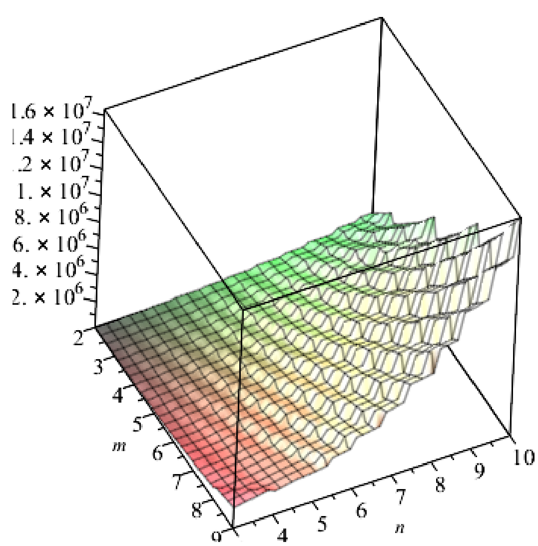
We compute the values of Mostar and edge version of Mostar indices for different test values of n and m(For, $n > m$).

Test values	$m=4$ $n=5$	$m=7$ $n=9$	$m=10$ $n=11$	$m=13$ $n=15$	$m=16$ $n=17$	$m=19$ $n=21$
$Mo(G)$	463104	5000112	16189008	55590480	114922080	267978384
$Mo_e(G)$	692656	7776376	25309888	87048536	179787424	365516144

TABLE 9. Test values of 1, 3, 5-Trihydroxybenzene Graph$[m \equiv 1(mod3), \forall n > m]$



Graphical Representation of Mostar index for [m≡1(mod 3), n > m]



Graphical Representation of edge Mostar index for [m≡1 (mod 3), n > m]

In the last case, let G be a graph of 1, 3, 5-Trihydroxybenzene $[m \equiv 2(mod3), \forall n > m]$. It has $24mn+12n$ number of vertices and $36mn+14n-2m$ number of edges. In this case, we will consider three types of families of orthogonal cuts, horizontal, vertical and oblique. We will consider oblique orthogonal cuts twice due to the symmetry of the structure.

Theorem 3.7. *Let G be a graph of 1, 3, 5-Trihydroxybenzene $[m \equiv 2(mod3), \forall n > m]$. Then, the Mostar index of the graph G is,*

$$
\begin{aligned}
Mo(G) = {} & 8n|24mn+12n-12(\lfloor m+\frac{1}{2}\rfloor+1)^2+36\lfloor m+\frac{1}{2}\rfloor|+4|24mn-72m+12n-24(\lfloor\frac{1}{2} \\
& n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+(72(\lfloor\frac{1}{2}n\rfloor+1))m+36\lfloor\frac{1}{2}n\rfloor|m+4|24mn-72m+12n- \\
& 24(\lfloor\frac{1}{2}n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+(72(\lfloor\frac{1}{2}n\rfloor+1))m+36\lfloor\frac{1}{2}n\rfloor|+4m|24mn+12n- \\
& 24\lfloor\frac{1}{2}n+\frac{1}{2})^{\rfloor}2m-12\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+24\lfloor\frac{1}{2}n+\frac{1}{2}m+12\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor|+\frac{16}{9}|24mn+12n+8 \\
& -32(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-12(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+212\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m^2+\frac{32}{9}|24mn+12n+ \\
& 8-32(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-12(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+212\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m+\frac{16}{9}|24mn+12n+ \\
& 8-32(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-12(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+212\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|+\frac{16}{9}|24mn+12n- \\
& 40-32(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+36(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+116\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2 \\
& +\frac{80}{9}|24mn+12n-40-32(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+36(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+116 \\
& \lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{64}{9}|24mn+12n-40-32(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+36(\lfloor\frac{1}{2}n-\frac{1}{2} \\
& m+\frac{1}{2}\rfloor+1)^2+116\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+\frac{16}{9}|24mn+12n-66-24(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+ \\
& 78(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-66\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m^2+\frac{32}{9}|24mn+12n-66-24(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+ \\
& 78(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-66\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m+\frac{16}{9}|24mn+12n-66-24(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+ \\
& 78(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-66\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|+\frac{16}{9}|24mn+12n-24(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3+54 \\
& (\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2-36\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor-30|m^2+\frac{56}{9}|24mn+12n-24(\lfloor n-\frac{1}{3}m+ \\
& \frac{2}{3}\rfloor+1)^3+54(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2-36\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor-30|m+\frac{40}{9}|24mn+12n-
\end{aligned}
$$

$$24(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3+54(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2-36\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor-30|+\frac{16}{9}|24 mn+12n-120-24\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor 12n-\frac{1}{6}m+\frac{5}{6}\rfloor|m^2 +\frac{80}{9}|24mn+12n-120-24\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor\frac{1}{2}n-\frac{1}{6}m +\frac{5}{6}\rfloor|m+\frac{64}{9}|24mn+12n-120-24\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor\frac{1}{2} n-\frac{1}{6}m+\frac{5}{6}\rfloor|$$

Table 10: Edge partition of 1, 3, 5-Trihydroxybenzene Graph $[m \equiv 2 \pmod 3,\ \forall n > m]$

Types of qoc's	*Types of edges*	*No. of qoc's*	*No. of edges*	*Peripherality of edges*
C_1^1	e_1^1	$2m+1$	$4n$	$\lvert 24mn+12n-12-24\sum_{i=1}^{\lfloor\frac{2m+1}{2}\rfloor}(i-1)\rvert$
c_2^1	e_2^1	n	$2m+2$	$\lvert 24mn+12n-24m-12-\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(48mi+24i-48m-24)\rvert$
c_2^2	e_2^2	$n-1$	$2m$	$\lvert 24mn+12n-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(48mi+24i)\rvert$
c_3^i	e_3^i	4	$8j-4$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{m+1}{6}\rfloor}(96i^2+120i-168)\rvert$
c_3^m	e_3^m	$2n-2m+2$	$8j$	$\lvert 24mn+12n-36-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}(96i^2+24i-120)\rvert$
c_4^i	e_4^i	4	$8j-4$	$\lvert 24mn+12n-12-\sum_{i=1}^{\lfloor\frac{m+1}{6}\rfloor}(72i^2-84i+12)\rvert$
c_4^{i+1}	e_4^{i+1}	$4n-\frac{4m}{3}+\frac{8}{3}$	$8j-2$	$\lvert 24mn+12n-\sum_{i=1}^{\lfloor n-\frac{m}{3}+\frac{2}{3}\rfloor}(72i^2-36i+6)\rvert$
c_4^m	e_4^m	$2n-\frac{2m}{3}-\frac{2}{3}$	$8j$	$\lvert 24mn+12n-60-\sum_{i=1}^{\lfloor\frac{n-\frac{m}{3}-\frac{1}{3}}{2}\rfloor}(72i^2+12i-60)\rvert$
For $1 \le j \le \frac{m+1}{3}$				

Proof. Let G be a 1, 3, 5-Trihydroxybenzene Graph $[m,n]$. For $G[m\equiv 2(mod3),\forall n>m]$ the number of edges corresponding to qocs are given in the table. By using table, the Mostar index is given below.

$$Mo(G)=\sum_{uv\varepsilon E(G)}|n_u-n_v|$$

$$=2\times 4n\times|24mn+12n-12-24\sum_{1}^{\lfloor\frac{2m+1}{2}\rfloor}(i-1)|+2\times(2m+2)\times|24mn+12n-24$$

$$-m-12-\sum_{i=1}^{\lfloor\frac{n}{2}\rfloor}(48mi+24i-48m-24)|+2\times 2m\times|24mn+12n-\sum_{i=1}^{\lfloor\frac{n-1}{2}\rfloor}(48mi+24$$

$$i)|+4\times\sum_{j=1}^{(m+1)/3}(8j-4)\times|24mn+12n-36-\sum_{i=1}^{\lfloor\frac{m+1}{6}\rfloor}(96i^2+120i-168)|+4\times 8\sum_{j=1}^{(m+1)/3}$$

$$j\times|24mn+12n-36-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}(96i^2+24i-120)|+4\times\sum_{j=1}^{(m+1)/3}(8j-4)\times|24mn+12$$

$$n-12-\sum_{i=1}^{\lfloor\frac{m+1}{6}\rfloor}(72i^2-84i+12)|+4\times\sum_{j=1}^{(m+1)/3}(8j-2)\times|24mn+12n-\sum_{i=1}^{\lfloor n-\frac{m}{3}+\frac{2}{3}\rfloor}(72i^2$$

$$-36i+6)|+4\times 8\sum_{j=1}^{(m+1)/3}j\times|24mn+12n-60-\sum_{i=1}^{\lfloor\frac{n-\frac{m}{3}-\frac{1}{3}}{2}\rfloor}(72i^2+12i-60)|$$

$$=8n|24mn+12n-12(\lfloor m+\frac{1}{2}\rfloor+1)^2+36\lfloor m+\frac{1}{2}\rfloor|+4|24mn-72m+12n-24(\lfloor\frac{1}{2}$$

$$n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+(72(\lfloor\frac{1}{2}n\rfloor+1))m+36\lfloor\frac{1}{2}n\rfloor|m+4|24mn-72m+12n-$$

$$24(\lfloor\frac{1}{2}n\rfloor+1)^2m-12(\lfloor\frac{1}{2}n\rfloor+1)^2+(72(\lfloor\frac{1}{2}n\rfloor+1))m+36\lfloor\frac{1}{2}n\rfloor|+4m|24mn+12n-$$

$$24\lfloor\frac{1}{2}n+\frac{1}{2})^{\rfloor}2m-12\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+24\lfloor\frac{1}{2}n+\frac{1}{2}m+12\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor|+\frac{16}{9}|24mn+12n+8$$

$$-32(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-12(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+212\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m^2+\frac{32}{9}|24mn+12n+$$

$$8-32(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-12(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+212\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m+\frac{16}{9}|24mn+12n+$$

$$8-32(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-12(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+212\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|+\frac{16}{9}|24mn+12n-40$$

$$-32(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+36(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+116\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+$$

$$\frac{80}{9}|24mn+12n-40-32(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+36(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2+116\lfloor\frac{1}{2}$$

$$n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{64}{9}|24mn+12n-40-32(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3+36(\lfloor\frac{1}{2}n-\frac{1}{2}m+$$

$$\frac{1}{2}\rfloor+1)^2+116\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+\frac{16}{9}|24mn+12n-66-24(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+78(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-66\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m^2+\frac{32}{9}|24mn+12n-66-24(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+78(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-66\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m+\frac{16}{9}|24mn+12n-66-24(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+78(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-66\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|+\frac{16}{9}|24mn+12n-24(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3+54(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2-36\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor-30|m^2+\frac{56}{9}|24mn+12n-24(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3+54(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2-36\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor-30|m+\frac{40}{9}|24mn+12n-24(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3+54(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2-36\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor-30|+\frac{16}{9}|24mn+12n-120-24\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor 12n-\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{80}{9}|24mn+12n-120-24\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{64}{9}|24mn+12n-120-24\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3+30\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2+54\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor|$$

□

Theorem 3.8. *Let G be a graph of 1, 3, 5-Trihydroxybenzene Graph* $[m\equiv 2(mod3),\forall n>m]$*. Then, the edge version of Mostar index of the graph G is,*

$$Mo_e(G)=8n|36mn-2m+14n-14|+8n|36mn-2m+4-18\lfloor m+\frac{1}{2}\rfloor^2n+18n\lfloor m+\frac{1}{2}\rfloor|+4|36mn-36m+14n-36(\lfloor\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+36(\lfloor\frac{1}{2}n\rfloor+1)m+42\lfloor\frac{1}{2}n\rfloor|m+4|36mn-36m+14n-36(\lfloor\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+36(\lfloor\frac{1}{2}n\rfloor+1)m+42\lfloor\frac{1}{2}n\rfloor)|+4m|36mn-4m+14n-34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m-18\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m+26\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor-8|+\frac{16}{9}|-36mn-\frac{2}{3}m-14n-\frac{56}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+8(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-288\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m^2+\frac{32}{9}|-36mn-\frac{2}{3}m-14n-\frac{56}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+8(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-288\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m+\frac{16}{9}|-36mn-\frac{2}{3}m-14n-\frac{56}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+8(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-288\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+\frac{164}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-64(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-28\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2+\frac{80}{9}|-36mn+\frac{2}{3}m-14n+\frac{164}{3}+4(\frac{1}{3}m+$$

$$\frac{4}{3})^2+48(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-64(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-28\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{64}{9}|-36mn+\frac{2}{3}m-14n+\frac{164}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-64(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-28\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+\frac{16}{9}|-36mn-\frac{74}{3}m-14n+40(\frac{1}{3}m+\frac{4}{3})^2+\frac{70}{3}+36(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-126(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+126\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m^2+\frac{32}{9}|-36mn-\frac{74}{3}m-14n+40(\frac{1}{3}m+\frac{4}{3})^2+\frac{70}{3}+36(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-126(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+126\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m+\frac{16}{9}|-36mn-\frac{74}{3}m-14n+40(\frac{1}{3}m+\frac{4}{3})^2+\frac{70}{3}+36(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-126(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+126\lfloor\frac{1}{6}m+\frac{71}{6}\rfloor|+\frac{16}{9}|-36mn-14n+92+4(\frac{1}{3}m+\frac{4}{3})^2+36(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3-90(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2+18\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor|m^2+\frac{56}{9}|-36mn-14n+92+4(\frac{1}{3}m+\frac{4}{3})^2+36(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3-90(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2+18\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor|m+(\frac{40}{9}|-36mn-14n+92+4(\frac{1}{3}m+\frac{4}{3})^2+36(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3-90(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2+18\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor|+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+\frac{104}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+36\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3-18\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2-48\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{80}{9}|-36mn+\frac{2}{3}m-14n+\frac{104}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+36\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3-18\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2-48\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{64}{9}|-36mn+\frac{2}{3}m-14n+\frac{104}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+36\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3-18\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2-48\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor|$$

Proof. Let G be a 1, 3, 5-Trihydroxybenzene Graph $[m,n]$. For $G[m\equiv 2(mod3),\forall n>m]$ the number of edges corresponding to qocs are given in the table. By using table, the Edge Mostar index is given below.

Table 11: Edge partition of 1, 3, 5-Trihydroxybenzene Graph $[m\equiv 2 \text{ (mod 3)}, \forall n>m]$

Types of qoc's	Types of edges	No. of qoc's	No. of edges	Peripherality of edges
C_1^1	e_1^1	2	$4n$	$\lvert 36mn+14n-2m-14\rvert$
C_1^2	e_1^2	$2m-1$	$4n$	$\lvert 36mn-2m+4-\sum_{i=1}^{\lfloor\frac{2m-1}{2}\rfloor}36ni\rvert$

Types of qoc's	Types of edges	No. of qoc's	No. of edges	Peripherality of edges
c_2^1	e_2^1	n	$2m+2$	$\lvert 36mn+14n-36m-14-\sum_{i=1}^{\lfloor \frac{n}{2} \rfloor}(72mi+28i-28)\rvert$
c_2^2	e_2^2	$n-1$	$2m$	$\lvert 36mn+14n-4m-\sum_{i=1}^{\lfloor \frac{n-1}{2} \rfloor}(68mi+36i-8)\rvert$
c_3^i	e_3^i	4	$8j-4$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{(m+1)/3}(8j-4)-\sum_{i=1}^{\lfloor \frac{m+1}{6} \rfloor}(144i^2+160i-232)\rvert$
c_3^m	e_3^m	$2n-2m+2$	$8j$	$\lvert 36mn+14n-2m-44-8\sum_{j=1}^{(m+1)/3} j-\sum_{i=1}^{\lfloor \frac{n-m+1}{2} \rfloor}(144i^2+16i-44)\rvert$
c_4^i	e_4^i	4	$8j-4$	$\lvert 36mn+14n-2m-10-\sum_{j=1}^{(m+1)/3}(8j-4)-\sum_{i=1}^{\lfloor \frac{m+1}{6} \rfloor}(108i^2-144i+36)\rvert$
c_4^{i+1}	e_4^{i+1}	$4n-\frac{4m}{3}+\frac{8}{3}$	$8j-2$	$\lvert 36mn+14n-2m-44-\sum_{j=1}^{(m+1)/3}(8j-2)-\sum_{i=1}^{\lfloor n-\frac{m}{3}+\frac{2}{3} \rfloor}(108i^2-72i-36)\rvert$
c_4^m	e_4^m	$2n-\frac{2m}{3}-\frac{2}{3}$	$8j$	$\lvert 36mn+14n-2m-10-8\sum_{j=1}^{(m+1)/3} j-\sum_{i=1}^{\lfloor \frac{n-\frac{m}{3}-\frac{1}{3}}{2} \rfloor}(108i^2+72i-30)\rvert$
For $1 \leq j \leq \frac{m+1}{3}$				

$$
\begin{aligned}
Mo_e(G) &= \sum_{e=uv\varepsilon E(G)} |m_u - m_v| \\
&= 2\times 4n \times |36mn+14n-2m-14| + 2\times 4n \times \left|36mn-2m+4-\sum_{i=1}^{\lfloor \frac{2m-1}{2} \rfloor} 36ni\right| + 2 \\
&\quad \times (2m+2)\times \left|36mn+14n-36m-14-\sum_{i=1}^{\lfloor \frac{n}{2} \rfloor}(72mi+28i-28)\right| + 2\times 2m \times |36mn \\
&\quad + 14n-4m-\sum_{i=1}^{\lfloor \frac{n-1}{2} \rfloor}(68mi+36i-8)| + 4\times \sum_{j=1}^{(m+1)/3}(8j-4)\times |36mn+14n-2m-
\end{aligned}
$$

$$44-\sum_{j=1}^{(m+1)/3}(8j-4)-\sum_{i=1}^{\lfloor\frac{m+1}{6}\rfloor}(144i^2+160i-232)|+4\times 8\sum_{j=1}^{(m+1)/3}j\times|36mn+14n$$

$$-2m-44-8\sum_{j=1}^{(m+1)/3}j-\sum_{i=1}^{\lfloor\frac{n-m+1}{2}\rfloor}(144i^2+16i-44)|+4\times\sum_{j=1}^{(m+1)/3}(8j-4)\times|36m$$

$$n+14n-2m-10-\sum_{j=1}^{(m+1)/3}(8j-4)-\sum_{i=1}^{\lfloor\frac{m+1}{6}\rfloor}(108i^2-144i+36)|+4\times\sum_{j=1}^{(m+1)/3}(8j$$

$$-2)\times|36mn+14n-2m-44-\sum_{j=1}^{(m+1)/3}(8j-2)-\sum_{i=1}^{\lfloor n-\frac{m}{3}+\frac{2}{3}\rfloor}(108i^2-72i-36)|+$$

$$4\times 8\sum_{j=1}^{(m+1)/3}j\times|36mn+14n-2m-10-8\sum_{j=1}^{(m+1)/3}j-\sum_{i=1}^{\lfloor\frac{n-\frac{m}{3}-\frac{1}{3}}{2}\rfloor}(108i^2+72i-30)|$$

$$=8n|36mn-2m+14n-14|+8n|36mn-2m+4-18\lfloor m+\frac{1}{2}\rfloor^2n+18n\lfloor m+\frac{1}{2}\rfloor|$$

$$+4|36mn-36m+14n-36(\lfloor\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+36(\lfloor\frac{1}{2}n\rfloor+1)m+42\lfloor$$

$$\frac{1}{2}n\rfloor|m+4|36mn-36m+14n-36(\lfloor\frac{1}{2}n\rfloor+1)^2m-14(\lfloor\frac{1}{2}n\rfloor+1)^2+36(\lfloor\frac{1}{2}n\rfloor+1)m+42\lfloor\frac{1}{2}$$

$$n\rfloor)|+4m|36mn-4m+14n-34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2m-18\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor^2+34\lfloor\frac{1}{2}n+\frac{1}{2}\rfloor m+26\lfloor\frac{1}{2}n+\frac{1}{2}$$

$$\rfloor-8|+\frac{16}{9}|-36mn-\frac{2}{3}m-14n-\frac{56}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+8(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+$$

$$1)^2-288\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m^2+\frac{32}{9}|-36mn-\frac{2}{3}m-14n-\frac{56}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3$$

$$+8(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-288\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m+\frac{16}{9}|-36mn-\frac{2}{3}m-14n-\frac{56}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48$$

$$(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3+8(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2-288\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+\frac{164}{3}+4$$

$$(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-64(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-28\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m^2$$

$$+\frac{80}{9}|-36mn+\frac{2}{3}m-14n+\frac{164}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-64(\lfloor\frac{1}{2}n-\frac{1}{2}m$$

$$+\frac{1}{2}\rfloor+1)^2-28\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|m+\frac{64}{9}|-36mn+\frac{2}{3}m-14n+\frac{164}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+48(\lfloor\frac{1}{2}n$$

$$-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^3-64(\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor+1)^2-28\lfloor\frac{1}{2}n-\frac{1}{2}m+\frac{1}{2}\rfloor|+\frac{16}{9}|-36mn-\frac{74}{3}m-$$

$$14n+40(\frac{1}{3}m+\frac{4}{3})^2+\frac{70}{3}+36(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-126(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+126\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m^2+$$

$$\frac{32}{9}|-36mn-\frac{74}{3}m-14n+40(\frac{1}{3}m+\frac{4}{3})^2+\frac{70}{3}+36(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3-126(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+$$

$$126\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor|m+\frac{16}{9}|-36mn-\frac{74}{3}m-14n+40(\frac{1}{3}m+\frac{4}{3})^2+\frac{70}{3}+36(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^3$$

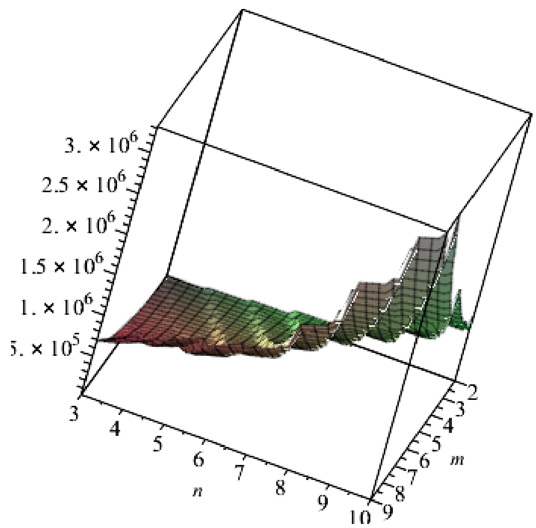
$$-126(\lfloor\frac{1}{6}m+\frac{1}{6}\rfloor+1)^2+126\lfloor\frac{1}{6}m+\frac{71}{6}\rfloor|+\frac{16}{9}|-36mn-14n+92+4(\frac{1}{3}m+\frac{4}{3})^2+36(\lfloor n$$
$$-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3-90(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2+18\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor|m^2+\frac{56}{9}|-36mn-14n+$$
$$92+4(\frac{1}{3}m+\frac{4}{3})^2+36(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3-90(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2+18\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor|m$$
$$+(\frac{40}{9}|-36mn-14n+92+4(\frac{1}{3}m+\frac{4}{3})^2+36(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^3-90(\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor+1)^2$$
$$+18\lfloor n-\frac{1}{3}m+\frac{2}{3}\rfloor|+\frac{16}{9}|-36mn+\frac{2}{3}m-14n+\frac{104}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+36\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3$$
$$-18\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2-48\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor|m^2+\frac{80}{9}|-36mn+\frac{2}{3}m-14n+\frac{104}{3}+4(\frac{1}{3}m+$$
$$\frac{4}{3})^2+36\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3-18\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2-48\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor|m+\frac{64}{9}|-36mn+$$
$$\frac{2}{3}m-14n+\frac{104}{3}+4(\frac{1}{3}m+\frac{4}{3})^2+36\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^3-18\lfloor\frac{1}{2}n-\frac{1}{6}m+\frac{5}{6}\rfloor^2-48\lfloor\frac{1}{2}n-\frac{1}{6}m$$
$$+\frac{5}{6}\rfloor|$$

□

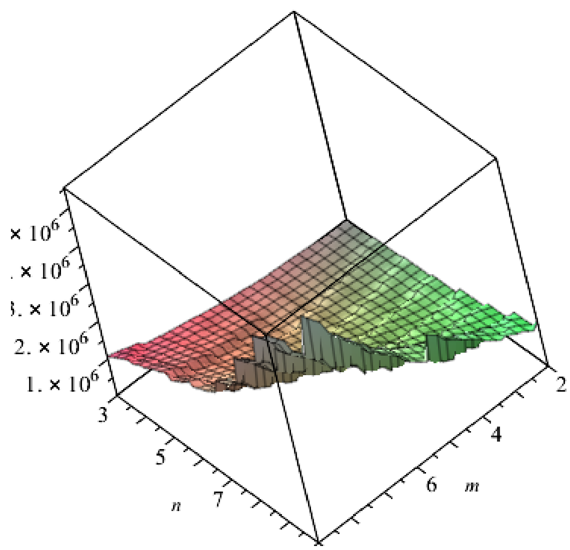
We compute the values of Mostar and edge version of Mostar indices for different test values of n and m(For, $n > m$).

Test values	$m=2$ $n=3$	$m=5$ $n=6$	$m=8$ $n=9$	$m=11$ $n=12$	$m=14$ $n=15$	$m=17$ $n=18$
$Mo(G)$	33168	453312	2435568	8122080	21487728	47143008
$Mo_e(G)$	40032	688112	3940640	13541616	36076304	79730480

TABLE 12. Test values of 1, 3, 5-Trihydroxybenzene Graph[$m \equiv 2(mod3), \forall n > m$]



Graphical Representation of Mostar index for [m≡2 (mod 3), n > m]



Grphical Representation od edge Mostar index for [m≡2 (mod 3), n > m]

4. Conclusion

In this study, we have applied a graph-theoretical approach to analyze the molecular structure of phloroglucinol by focusing on peripheral-based molecular descriptors, specifically the Mostar index. Through computational analysis, we demonstrated how the Mostar index effectively captures key structural features of the phloroglucinol molecule, linking them to its chemical properties such as stability, reactivity, and potential biological activity. Our findings underscore the utility of molecular descriptors derived from graph theory as powerful tools for understanding the intricate relationships between molecular structure and chemical behavior. The computational framework developed for the calculation and optimization of the Mostar index has proven to be both efficient and adaptable, offering valuable insights into the peripheral characteristics of molecules like phloroglucinol. This approach not only enhances our comprehension of the molecule's fundamental properties but also paves the way for future research in molecular descriptor-based studies, particularly in the fields of chemistry and pharmaceutical sciences. Overall, the results of this study emphasize the potential of molecular graph theory in contributing to the systematic exploration of molecular properties and their implications in both theoretical and applied chemistry.

Authors Contribution

All authors contributed equally in writing of this article.

Conflict of Interests

The authors declare that there is no conflict of interests.

References

[1] H. Wiener, Structural Determination of Paraffin Boiling Points, J. Am. Chem. Soc. 69 (1947), 17–20. https://doi.org/10.1021/ja01193a005.

[2] H. Wiener, Correlation of Heats of Isomerization, and Differences in Heats of Vaporization of Isomers, Among the Paraffin Hydrocarbons, J. Am. Chem. Soc. 69 (1947), 2636–2638. https://doi.org/10.1021/ja01203a022.

[3] N. Ali, Z. Kousar, M. Safdar, F.T. Tolasa, E. Suleiman, Mapping Connectivity Patterns: Degree-Based Topological Indices of Corona Product Graphs, J. Appl. Math. 2023 (2023), 8975497. https://doi.org/10.1155/2023/8975497.

[4] N. Ali, H.M. Afzal Siddiqui, M.B. Riaz, M.I. Qureshi, A. Akgül, A Graph-Theoretic Approach to Ring Analysis: Dominant Metric Dimensions in Zero-Divisor Graphs, Heliyon 10 (2024), e30989. https://doi.org/10.1016/j.heliyon.2024.e30989.

[5] N. Ali, H.M.A. Siddiqui, M.I. Qureshi, M.E.M. Abdalla, N.S.A. EL-Gawaad, F.T. Tolasa, On Study of Multiset Dimension in Fuzzy Zero Divisor Graphs Associated with Commutative Rings, Int. J. Comput. Intell. Syst. 17 (2024), 298. https://doi.org/10.1007/s44196-024-00706-2.

[6] M. Albertson, The Irregularity of a Graph, Ars. Comb. 46 (1997), 219–225.

[7] S.N. Saleh, M.K. Naseer, N. Ali, et al. Graph-theoretical Approaches to Entropy in $Cu_2 * O$ Crystalline Structures: Implications for Biomedical and Energy Applications, Commun. Math. Biol. Neurosci., 2025 (2025), 64. https://doi.org/10.28919/cmbn/9133.

[8] M.A. Shahzad, N. Ali, S.A.O. Abdallah, N.S. Abd El-Gawaad, On Study of Some Bounds for Fault-Tolerant Metric Dimension and Adjacency Fault-Tolerant Resolving Set of Corona Product Graphs, Discret. Math. Algorithms Appl. 2024 (2024), 2450105. https://doi.org/10.1142/s1793830924501052.

[9] M.M. Ibrahim, R. Venkatesan, N. Ali, et al. Enhanced Image Hash Using Cellular Automata with Sponge Construction and Elliptic Curve Cryptography for Secure Image Transaction, Sci. Rep. 15 (2025), 14148. https://doi.org/10.1038/s41598-025-98027-7.

[10] T. Reti, R. Sharfdini, A. Dregelyi-Kiss, H. Hagobin, Graph Irregularity Indices Used as Molecular Descriptors on QSPR Studies, MATCH Commun. Math. Comput. Chem. 79 (2018), 509–524.

[11] V.R. Kulli, On K Banhatti Indices of Graphs, J. Computer Math. Sci. 7 (2016), 213–218.

[12] J. Zheng, Z. Iqbal, A. Fahad, et al. Some Eccentricity-Based Topological Indices and Polynomials of Poly(EThyleneAmidoAmine) (PETAA) Dendrimers, Processes 7 (2019), 433. https://doi.org/10.3390/pr7070433.

[13] A. Fahad, M.I. Qureshi, S. Noureen, Topological Descriptors of Poly Propyl Ether Imine (PETIM) Dendrimers, Biointerface Res. Appl. Chem. 11 (2020), 10968–10978. https://doi.org/10.33263/briac113.1096810978.

[14] , Zagreb Connection Index of Drugs Related Chemical Structures, Biointerface Res. Appl. Chem. 11 (2020), 11920–11930. https://doi.org/10.33263/briac114.1192011930.

[15] Y. Chu, M. Abid, M.I. Qureshi, A. Fahad, A. Aslam, Irregular Topological Indices of Certain Metal Organic Frameworks, Main Group Met. Chem. 44 (2021), 73–81. https://doi.org/10.1515/mgmc-2021-0009.

[16] T. Došlić, I. Martinjak, R. Škrekovski, S. Tipurić Spužević, I. Zubac, Mostar Index, J. Math. Chem. 56 (2018), 2995–3013. https://doi.org/10.1007/s10910-018-0928-z.

[17] K. Deng, S. Li, Extremal Catacondensed Benzenoids with Respect to the Mostar Index, J. Math. Chem. 58 (2020), 1437–1465. https://doi.org/10.1007/s10910-020-01135-0.

[18] A. Tepeh, Extremal Bicyclic Graphs with Respect to Mostar Index, Appl. Math. Comput. 355 (2019), 319–324. https://doi.org/10.1016/j.amc.2019.03.014.

[19] N. Tratnik, Computing the Mostar Index in Networks With Applications to Molecular Graphs, Iran. J. Math. Chem. 12 (2021), 1–18.

[20] M. Arockiaraj, J. Clement, N. Tratnik, Mostar Indices of Carbon Nanostructures and Circumscribed Donut Benzenoid Systems, Int. J. Quantum Chem. 119 (2019), 1–11. https://doi.org/10.1002/qua.26043.

[21] M. Arockiaraj, J. Clement, N. Tratnik, et al. Weighted Mostar Indices as Measures of Molecular Peripheral Shapes with Applications to Graphene, Graphyne and Graphdiyne Nanoribbons, SAR QSAR Environ. Res. 31 (2020), 187–208. https://doi.org/10.1080/1062936x.2019.1708459.

[22] F. Hayat, B. Zhou, On Cacti with Large Mostar Index, Filomat 33 (2019), 4865–4873. https://doi.org/10.2298/fil1915865h.