

## St. Philomena's College (Autonomous), Mysuru Post Graduate Studies and Research Centre Department of Mathematics

# A Report on Interactive Session on "On l-Regular Partition Function with Its Mathematical Applications" Date: 3<sup>rd</sup> April, 2024.

The interactive session titled "On l-Regular Partition Function with Its Mathematical Applications" was successfully conducted at PG Department of Mathematics, St. Philomena's College, Mysore. The session aimed to provide postgraduate students of Mathematics with a comprehensive understanding of l-regular partition theory and its diverse applications in various mathematical contexts.

## **Objectives:**

The session was designed with the following objectives in mind:

- To introduce postgraduate students of Mathematics to the theory of l-regular partition and its significance in combinatorics and number theory.
- To explore the mathematical properties and combinatorial structures associated with l-regular partition.
- To discuss the applications of l-regular partition theory in areas such as integer partitions, representation theory, and combinatorial optimization.
- To provide a platform for interactive discussions with knowledge exchange among students and experts in the field.

### **Outlines of the Sessions:**

#### 1. Introduction to l-Regular Partition Theory:

Prof. K. R. Vasuki provided an overview of l-regular partition theory, stressing its basic concepts and significance in mathematics.

### 2. Properties and Combinatorial Structures of l-Regular Partitions:

Exploration of the mathematical properties and combinatorial structures associated with lregular partitions were discussed. Participants gained insights into the various patterns and structures formed by l-regular partitions.

#### 3. Applications in Integer Partitions and Representation Theory:

Prof. Vasuki discussed the applications of l-regular partition theory in integer partitions and representation theory. Real-world examples were mentioned to illustrate the practical implications of l-regular partitions in these areas.

### 4. Combinatorial Optimization and Related Problems:

The session focused on the applications of l-regular partition theory in combinatorial optimization and related problems. Participants learned about how l-regular partitions can be utilized to solve optimization problems efficiently. The session concluded with an interactive session where participants engaged in discussions facilitated by Prof. Vasuki which provided an opportunity for participants to apply their knowledge and clarify their doubts.

### **Acknowledgments:**

We extend our sincere gratitude to Prof. K. R. Vasuki for his expertise and insights greatly enriched the learning experience of the participants and contributed to the success of the session. Also, we would also like to express our appreciation to our Management and the Director of St. Philomena's College, Mysore, for their unwavering support and encouragement in organizing this workshop. Their commitment to academic excellence and their vision for promoting interdisciplinary learning initiatives have been instrumental in the success of this event.



# **Conclusion:**

The interactive session on "On l-Regular Partition Function with Its Mathematical Applications" provided postgraduate students of mathematics with valuable insights into an advanced area of combinatorics and its applications. Through informative and interactive discussions, participants gained a deeper understanding of l-regular partition theory and its relevance in various mathematical contexts.