# PG DEPARTMENT OF MATHEAMATICS

## GOVT COLLEGE MOKERI

**Report on Interaction with Dr. A. Padmanabhan for Second-Semester M.Sc. Students**

An academic interaction session was held on 13th March 2024 from 9:30 AM to 12:30 PM for the second-semester M.Sc. Mathematics students of Govt. College Mokeri. The event featured a lecture by Dr. A. Padmanabhan, retired professor and former Head of the Department of Mathematics, who delivered an insightful talk on the fundamental concepts of Real Analysis.

The programme commenced with a welcome address by Dr. Santhosh P. K., faculty of the Mathematics Department. Dr. Padmanabhan's lecture focused on essential topics in Real Analysis, providing a strong conceptual foundation for the students.

Key topics covered during the session included:

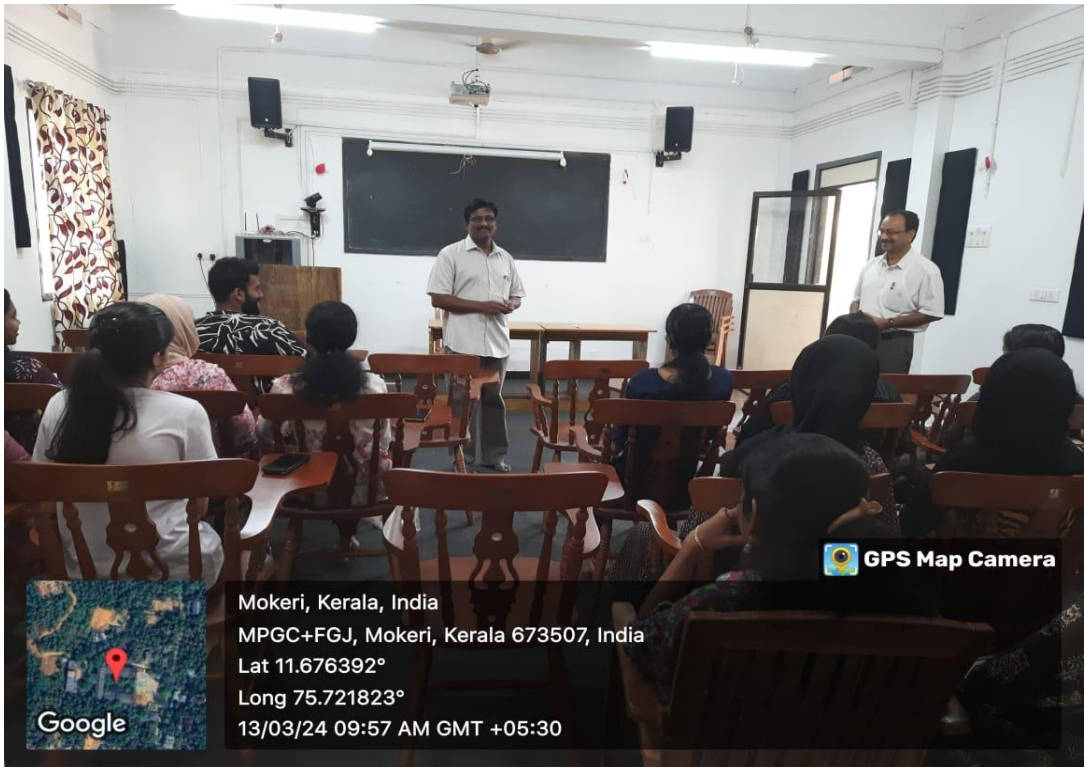
1. **The Real Number System**:
   Dr. Padmanabhan discussed the construction of the real number system, explaining its algebraic and order properties, with an emphasis on the completeness property, which sets real numbers apart from rational numbers.
2. **Sequences and Series**:
   The session included a detailed explanation of limits of sequences, convergence criteria, bounded and monotonic sequences, and tests for convergence, such as the comparison and ratio tests. He also introduced the concept of infinite series.
3. **Continuity and Differentiability**:
   A thorough explanation of the epsilon-delta definition of continuity was provided, along with key theorems like the Intermediate Value Theorem and Extreme Value Theorem. Dr. Padmanabhan also discussed the relationship between continuity and differentiability.
4. **Topology of the Real Line**:
   The lecture covered important concepts such as open and closed sets, compactness, and

connectedness, helping students understand the structural aspects of the real line from a topological perspective.

5. **Functions of Several Variables**:
   Dr. Padmanabhan introduced students to the differentiability and continuity of multivariable functions, including partial derivatives and the concept of differentiability in higher dimensions.
6. **Riemann Integration**:
   The session also covered Riemann integration, discussing the necessary conditions for integrability and the Fundamental Theorem of Calculus, which links differentiation and integration.

Dr. Padmanabhan's session was highly interactive, with students engaging in discussions and clarifying their doubts on these fundamental topics. His clear explanations helped the students grasp challenging concepts, laying a strong foundation for their future studies.

The event concluded with a vote of thanks proposed by Smt. Mayooka, who expressed gratitude to Dr. Padmanabhan for his valuable insights and to the department for organizing the session. The interaction proved to be a highly beneficial and enriching experience for the students, setting the stage for their academic journey in M.Sc. Mathematics.

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