

Andhra Christian College, Guntur

(Day, Evening & P.G.)

NOTICE

Date: 19-08-2022

All the B. Sc., Mathematics students are hereby informed to attend a seminar on "Group Theory: Kernel of a Homomorphism, Fundamental Theorem of Homomorphisms and its Applications" to be conducted on 22-08-2022. Mr. S. M. Subhani, Head, Department of Mathematics, St. Ann's Degree College for Women, Guntur will be the Resource Person for this seminar.

Venue: Dept. of Mathematics

Time : 4.00 p.m.

B. Subhani
19/08/22

Head

Department of Mathematics

Dr. B. VIJAYA KUMAR
Department of Mathematics
Andhra Christian College, GUNTUR

Principal
Principal

PRINCIPAL
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GUNTUR

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Andhra Christian College::Guntur

Department of Mathematics

Seminar Report on "Group Theory: Kernel of a Homomorphism, Fundamental Theorem of Homomorphisms and its Applications"

Introduction

The Department of Mathematics, Andhra Christian College, Guntur, organized a seminar on "Group Theory: Kernel of a Homomorphism, Fundamental Theorem of Homomorphisms and its Applications" on 22-08-2022. The seminar was graced by the presence of Mr. S. M. Subhani, Head, Department of Mathematics, St. Ann's Degree College for Women, Gorantla, Guntur, who served as the resource person.

Objectives of the Seminar

The seminar aimed to provide an in-depth understanding of the concepts of group theory, specifically focusing on:

1. The kernel of a homomorphism.
2. The fundamental theorem of homomorphisms.
3. Applications of these concepts in various mathematical and real-world contexts.

Seminar Proceedings

Opening Remarks

The seminar commenced with an introductory speech by the Head of the Department Dr. B. Vijaya Kumar. The speaker welcomed Mr. S. M. Subhani and highlighted his significant contributions to the field of Mathematics and his extensive experience in teaching.

Mr. S. M. Subhani began his presentation by defining a homomorphism between two groups, emphasizing the structure-preserving nature of these functions. He then introduced the concept of the kernel of a homomorphism, which is the set of elements in the domain that map to the identity element in the codomain.

Key Points Covered:

- Definition of a homomorphism.
- Definition and properties of the kernel of a homomorphism.
- Examples illustrating the calculation of kernels.
- The significance of the kernel in understanding the structure of groups.

After that he delved into the fundamental theorem of homomorphisms, also known as the first isomorphism theorem. He explained how this theorem provides a powerful tool for understanding the relationship between different groups.

Key Points Covered:

- Statement and proof of the fundamental theorem of homomorphisms.
- Examples demonstrating the application of the theorem.
- The role of normal subgroups and quotient groups in the theorem.
- How the theorem aids in the classification of groups.

After that he focused on the applications of the kernel of a homomorphism and the fundamental theorem of homomorphisms. Mr. Subhani discussed how these concepts are utilized in various areas of Mathematics and other disciplines.

Key Points Covered:

- Applications in solving polynomial equations.
- Use in cryptography and coding theory.
- Applications in symmetry and physics.
- Real-world problems where group theory plays a crucial role.

Interactive Session

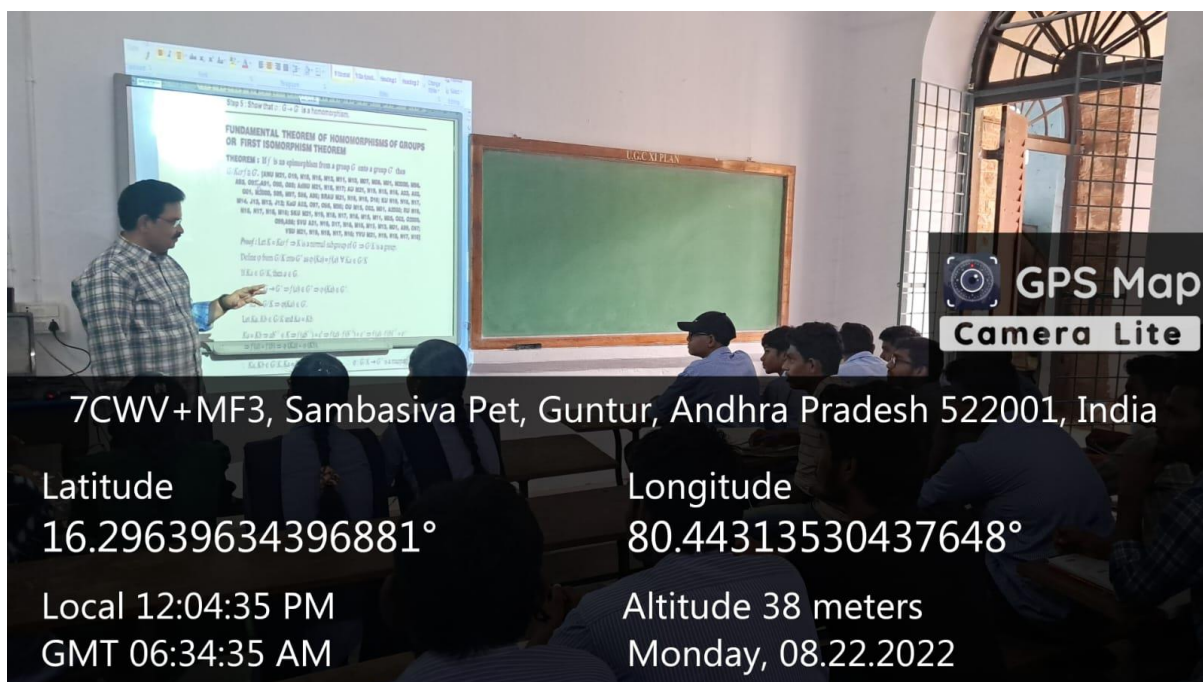
The seminar also included an interactive session where participants had the opportunity to ask questions and discuss their doubts with Mr. Subhani. This session was highly engaging and provided additional clarity on the topics discussed.

Conclusion

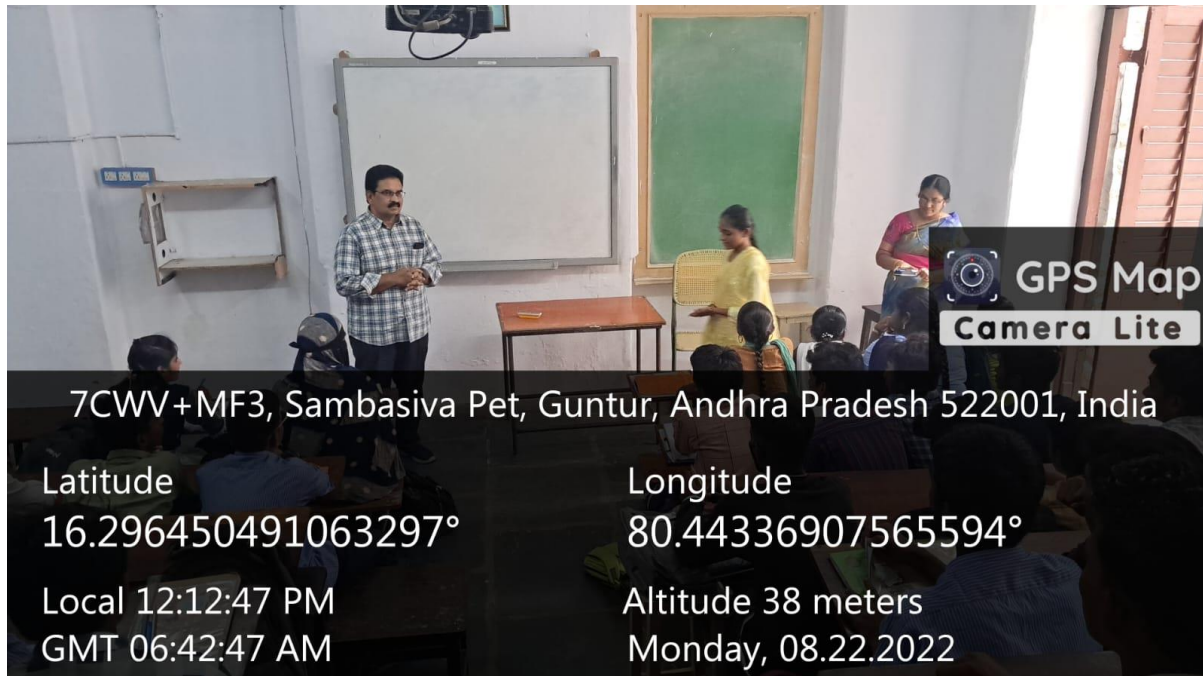
The seminar concluded with a vote of thanks by one of the participants. The participants expressed their appreciation for Mr. S. M. Subhani's insightful presentations and his ability to explain complex concepts in an accessible manner. The seminar was a great success, significantly enhancing the participants' understanding of group theory and its applications.

Acknowledgements

The Department of Mathematics, Andhra Christian College, Guntur, extends its heartfelt gratitude to Mr. S. M. Subhani for his valuable contribution to the seminar. Special thanks to the faculty members, and students for their active participation and support.



Mr. S. M. Subhani, Resource Person for the Seminar, with Participants



The seminar concluded with a vote of thanks by one of the participants

List of Students

S. No.	Name of the Student	Class & Group	Roll.No	Signature
1	K.Hemanth	I B. Sc., MPC	602	K. Hemanth
2	M.RaviTeja	I B. Sc., MPC	603	M. Ravi Teja.
3	Sk.Shahina Begum	I B. Sc., MPC	604	Sk. Shahina Begum
4	S.Rani	I B. Sc., MPC	605	S. Rani
5	A.Ravi Teja	I B. Sc., MPC	606	A. Ravi Teja.
6	M.Keethi	I B. Sc., MPC	609	M. Keethi
7	D.Yesu Babu	I B. Sc., MPC	610	D. Yesu Babu
8	E.Srikanth	I B. Sc., MPC	611	E. Srikanth
9	J.Haveela	I B. Sc., MPC	612	J. Haveela
10	P.Madhavi	I B. Sc., MPC	613	P. Madhavi
11	K.Sailaja	I B. Sc., MPCComp.	614	K. Sailaja
12	T.Venkata Rao	I B. Sc., MPCComp.	1402	T. Venkata Rao
13	A.Gopi Chand	I B. Sc., MPCComp.	1403	A. Gopi Chand
14	D.Tagore	I B. Sc., MPCComp.	1404	D. Tagore
15	B.Sandhya Rani	I B. Sc., MPCComp.	1405	B. Sandhya Rani
16	Sk.Nazeera	II B. Sc., MPC	601	Sk. Nazeera
17	Y.Naga Bhargav	II B. Sc., MPC	604	Y. Naga Bhargav.
18	Sk.Naseema	II B. Sc., MPC	606	Sk. Naseema
19	K.Madhu Kumar	II B. Sc., MPC	607	K. Madhu Kumar
20	T.Jeeva Saranu	II B. Sc., MPC	608	T. Jeeva Saranu
21	Md.Sultan Sareef	II B. Sc., MPC	609	Md. Sultan Sareef
22	B.Prasanna Babu	II B. Sc., MPC	610	B. Prasanna Babu.
23	B.Shyam Kumar	III B.Sc.,MPC	601	B. Shyam Kumar
24	B. Naveen Kumar	III B.Sc.,MPC	602	B. Naveen Kumar
25	S. Revanth Siva	III B.Sc.,MPC	609	S. Revanth Siva

26.	K. Chaitanya	III B.Sc.,MPC	623	K.chaitanya
27.	P.Thamas	III B.Sc.,MPCComp.,	1401	P.Thamas
28.	K.Guravaiah	III B.Sc.,MPCComp	1402	K. Guravaiah
29.	K.Vyshnavi	III B.Sc.,MPCComp	1417	K. Vyshnavi
30.	P.Sameera	III B.Sc.,MPCComp	1408	P.sameera
31.	A.Ravi Kumar	III B.Sc.,MPCComp	1409	A.Ravi Kumar
32.	D.Durga Rao	III B.Sc.,MPCComp	1418	D. Durga Rao
33.	K.John Wesly	III B.Sc.,MPCComp	1423	K. John wesly
34.	M.Gopi Chand	III B.Sc.,MPCComp	1424	M.Gopi chand
35.	V.Pushparajy	III B.Sc.,MPCComp	1425	V.Pushparajy
35.	D.Harshini	III B.Sc.,MPCComp	1410	D.Harshini?
36.	V.Mahesh Babu	III B.Sc.,MPCComp	1419	v. mahesh Babu
37.	G.Srinu	III B.Sc.,MPCComp	1420	G. Srinu
38.	Y.Prem Kumar	III B.Sc.,MPC	625	Y.premkumar
39.	R.Sai Kumar	III B.Sc.,MPC	626	R.Sai Kumar
40.	V.Ganesh	III B.Sc.,MPC	627	V. Ganesh