SAMBALPUR UNIVERSITY

JYOTIVIHAR, BURLA

SARBATI DEVI WOMEN'S COLLEGE,

RAJGANGPUR

GUIDED BY:

MANJUSA PRADHAN

SUMMITED BY:

SHRUTI HORO

ROLL NO- S05322MTH001

Scanned with OKEN Scanner

CERTIFICATE

This is certify that, this dissertation entitled "Introduction of matrix "being submitted by Hemalata Majhi in partial fulfilment of requirement for the award bechlor in Science (mathmetics) is a benificed record of her own study carried out by her under my Supervision and guidance.

The word reported in dissertation is in her own review work and has been submitted to any other institution university for the award of any degree and diploma.

Date :- 25/03/25
Place :- Rajgangpur

Miss.Manjusa Pradhan
Guide(examinor)
Sarbati devi women's college, Rajgangpur.
770017
Odisha.

Scanned with OKEN Scanner

ACKNOWLEDGEMENT

I would like to express my special thanks of gratitude to my teacher smt. Manjusa Pradhan who has gave me the golden opportunity to do this wonder full project on the topic "Introduction of matrix " is also help me in doing a lot of research and we come to know about so many new thing we're really thank full them.

I also want to thank all the teaching and non-teaching staff of Sarbati devi women's college, who helped in encourage me to complete the project.

I would also like my friends who help me a lot infinalizig this project in the limited time frame.

Date:- 25.03.25
Place:- Rajganjpur

Shruti Horo
Signature

Scanned with OKEN Scanner

DECLARATION

Shruti Horo hereby declare that the world presented in this dissertation has been carried out by me in the department of mathematics Sarbati devi women's college, Rajgangpur and further that it has not been Submitted earlier wholly or in part of any University or institution for the award of any degree and diploma.

Date: - 25.3.25

Place: - Rajgangpur.

Shruti Horo
Signature

Scanned with OKEN Scanner

SI NO	INDEX	PAGE NO
1.	GENERAL INTRODUCTION	1-2
1.1	BACKGROUND OF THE STUDY	
1.2	STATEMENT OF PROBLEM	
1.3	AIM OF THE OBJECTIVES	
2.	THEORY OF MATRICES	
2.1	DEFINAION AND TYPES OF MATRICES	3
2.2	ADDITION AND SUBTRACTION OF MATRICES	7
2.3	PROPERTIES OF MATRIX ADDITION	8
2.4	MULTIPLICATION OF MATRICES	9
2.5	PROPERTIES OF MATRIX MULTIPLICATION	11
2.6	ELEMENTARY ROW OPERATION	14
2.7	ECHELON AND ROW-REDUCED ECHELON FORMS OF MATRIX	17
2.8	DETERMINANT OF MATRIX	22
2.9	INVERSE OF MATRIX	24
2.10	SOLBING SYSTEMS OF EQUATIONS USING MATRICES	26
	RANK OF A MATRIX	30
3.	APPLICATION OF MATRIX INTO LINEAR ALGEBRA	
3.1	LINEAR TRANSFORMATION	32
3.2	MATRIX AND IT'S ASSOCIATED WITH A LINEAR MAP	35
3.3	LINEAR MAP ASSOCIATED WITH A MATRIX	38
3.4	GAUSS ELIMINATION METHOD	41
3.5	JACOBI METHOD	46
4.	REAL LIFE APPLICATION	
4.1	BALANCING OF CHEMICAL EQUATIONS USING MATRIX	49
4.2	INTRODUCTION	50
4.3	METHODOLOGY	50
4.4	CONCLUSION	53

Scanned with OKEN Scanner