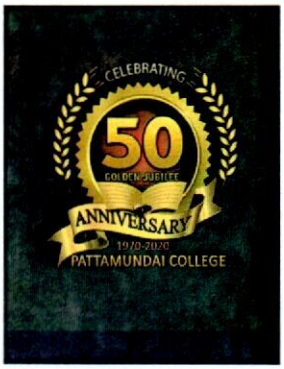


A Seminar on

"History of Number System & Its Application"

Resource Person: Dr Nabaghana Samal

Organisedby

Department of Mathematics,

Pattamundai College, Pattamundai

On

28 February 2023

Session 2022-23

The Formula

+ Year Code
+ Month Code
+ Century Code
+ Date Number
- Leap Year Code

Total Mod 7

Report

A seminar was organised by Department of Mathematics, Pattamundai College, Pattamundai on 28th February 2023 on the topic **" History of Number System & Its Application"**. Dr Nabaghana Samal, Former Associate Professor, Kendrapara Autonomous College, Kendrapara who graced the seminar with his analytical thinking. He discussed the chronological development of number system from Greek era. He also explained the application of it to calculate week days of any month of a particular year by using congruence modulo formula. We were able to get the beautiful glimpses of the students of our Department and other students of science wing in this seminar. Sri Arabinda Pandab, Head of the Department gave a key note address of the topic. Principal Dr Premalata Rout welcomed the guest and participants. The seminar was ended with a vote of thanks by Dr Nirmal Kumar Sahoo, another faculty member.

1/3/2023

IQAC Co-ordinator
Pattamundai College

1/3/23
Arabinda Pandab
HOD, Mathematics
H.O.D.,Mathematics
Pattamundai College
Pattamundai

06/03/23
Principal
Pattamundai College

OFFICE OF THE PRINCIPAL
Mobile : 9437376724

PATTAMUNDAI COLLEGE

NAAC ACCREDITED B GRADE
PATTAMUNDAI, KENDRAPARA, ODISHA - 754215

Ref No. :.....261..... Date.....25/02/2023.....

To

Dr Nabaghana Samal ,
Former Associate Professor of Mathematics,
Kendrapara Autonomus College,
Kendrapara

Sub: - An invitation as Resource Person in the Departmental Seminar Organized by Department of Mathematics on 28.02.2023.

Sir,

It is my pleasure to invite you as **Resource Person** in the Departmental Seminar on the topic **"History of Number System & Its Applications"** to be organized by Department of Mathematics, at 10.00 am on 28.02.2023 in the Auditorium Hall of our institution.

Your kind consent in this regard is highly solicited.

Yours Faithfully,

25/02/23

Principal
Pattamundai College

Principal
Pattamundai College

Gmail

Principal Pattamundai College <pattamundaicollege@gmail.com>

Acknowledgement of invitation

1 message

n.samalmath1957 <n.samalmath1957@gmail.com> Sat, Feb 25, 2023 at 12:32 PM
To: pattamundaicollege@gmail.com

I thankfully received your invitation and conformed

Sent from my Samsung Galaxy smartphone.

Bio data of Resource Person

Dr Nabaghana Samal, Former Associate Professor of Mathematics,
Kendrapara Autonomous College, Kendrapara

Dr Samal completed M.Sc from Utkal University, Vani Vihar and B.Ed from Radhanath Training College, Cuttack. He got a Govt job as scientific assistant in Department of Chemistry in Testing Lab Cuttack and he served their from 21.10.79 to 28.11.82, but due to his keen interest in Mathematics he resigned and joined as Lecturer in Mathematics in S.V.M College on 29.11.1982. After transfer from S.V.M College he joined as lecturer in Mathematics in Kendrapara Autonomous College on 12.07.1998 and served there from 1998 to 2005 and then transferred from Kendrapara Autonomous College to M S College, Barambah on 28.11.2005 and again on transfer basis he joined in Kendrapara on 12.06.2012 and continued till his superannuation. Then he joined in KIIT +2 Science College as Professor of Mathematics and continuing as such. He organized four numbers of UGC sponsored seminar in M.S. College, Baramba and one in Kendrapara Autonomous College. He had completed a minor research project on the topic entitled "Unconventional Vedic Method of Arithmetic Operation and Its Application to Other Branches of Mathematics" funded by UGC .He awarded PhD in the year 2015 and his thesis was " General and some special functions and Probability Distribution with the help of Matrix Arguments". Now he is doing research entitled "Enhancing Mathematics Ability of School Students in Odisha: A Study" under Utkal University of Culture, Bhubaneswar. He has published 5 papers in National journal of Mathematics.

History of Number System & Its Applications

- Dr Nabaghana Samal ,
Former Asso Prof , Kendrapara Autonomous College, Kendrapara

The Philosopher KANT expressed the view of generalisation of philosophy in the simpler statement that " All knowledges begin with experiences , there is no doubt". But Psychologist begin to turn their attention to the process of perception as the basis from which our knowledge is accured. The process of perceiving is outlined by Bartley who explained perceiving is the process by which the organism relates itself to its surroundings. The sum total of any individual's perceiving of the external world and his fellow constituents has own personal experience of life is knowledge.

The fundamental mathematical ideas form part of this general field of experience gained through perception of external world and one's follow human beings. In all the situation in which numbers are appropriate and resulting percept and experience carry the two fold characteristic of supplying further mathematical situations as well as of basing further mathematical development deep in the broad field of human experience.

It's assumed that the subject mathematics arise in answer to man's practical needs. Herodutus explained origin of maths is practical necessity of human being and Aristotle said origin of mathematics priestly leisure and ritual.

The word MATHEMATICS is of course Greek being derived from Greek word "μάθημα" through the objective "μαθηματικός". The literal meaning of "μάθημα" is simply a subject of instruction. Hence Mathematics is a subject of instruction. Pythagorian were 1st to comprehend Geometry and Arithmetic under one name "μαθηματικη". Greek divided the whole branch of Mathematics in to two types: (i) Pure, (ii) Applied.

The theory of Number is one of the oldest branches of Mathematics. It seems that the Greek were indebted to the Babylonians and ancient Egyptians care of Mathematics about the properties of the Natural numbers. But the 1st rudiments of an actual theory are generally credited to Pythagorian and his disciples 580BC & 562BC. Among writings we find that 1(one) represented reason ,for reason could produce only one constituent body of truth, 2 stands for man , 3 for woman, 4 is for justice and 5 was identified with mirage as it is formed by union of 2 and 3 and so on.

The Pythagorean connected the unit in Arithmetic and the point in Geometry by saying that unit is a point without position and point is a unit having position . Aristotle observed that unit is not itself a number since the measure is not measures but unit is the beginning or principle of numbers.

Iamblichus and Thymaridas defined the unit as a limiting quantity or limit of fewness and some defined unit separates multiples from submultiples.

According to Thales Numbers are collections of unit.

Euclid defined numbers are nothing but multitude made up of units.

Pythagorean defined numbers are a progression of multitude beginning from unit and a regression ending in it.

Eudoxus defined a number as a determinate multitudes.

$1,1^{+}=2,2^{+}=3,3^{+}=4,$.....

According to Set Theory, Numbers are symbols which representing the common properties of sets which are equipollent or it is the cardinality of all equivalent sets among sets.

Application:

Generally we are using Gregorian calendar.

Let Y denote the Gregorian year. March and April are counted as 1^{st} and 2^{nd} month and Jan, Feb of the year Y+1 in Gregorian year counted as 11^{th} & 12^{th} month of the year Y. No. Of days in a common year is $365\equiv1 \pmod 7$ and number of days in Leap year is $366\equiv2 \pmod 7$.

As 365^{th} day of the year falls Feb 28 .

Feb 28 always falls on the same week day as the previous year March 1.Thus if a particular March 1, immediately follow Feb 28 .Its week day number will be one more modulo 7 than the week day number of the previous March 1. But if it is a leap year, then Feb is 29 days. So it's week day number will be increased by 2. i.e, if D_y is week day of March 1 of the year Y then in the year Y+1, Y+2,Y+3 has numbers congruence modulo 7 to D_y+1, D_y+2, D_y+3. But D_y+5 for Y+4 year (Y is Century Year)

D_y for March 1of any year y>1600 will satisfy

$$D_y\equiv D_{1600}+(Y-1600)+L \pmod 7 \quad \text{.....(1)}$$

Where L is the number of Leap years between March 1,1600 and March 1 of the year Y.

For convenience we take week days Sunday through Saturday by Number 0,1,2,3,...,6

And month 'm' takes March 1, April 2, ..., Dec 10 of the year Y and Jan 11, Feb 12 of the year Y+1

Example:

March 1 of the year 2023.

$D_y\equiv D_{1600}+(Y-1600)+L$

$D_{1600}=3$ (Wednesday)

L= No. of leap year between 1600& Y .

$$\left[\frac{Y-1600}{4}\right]=\left[\frac{Y}{4}\right]-400 \quad \text{.....(2)}$$

Number of Leap century years is

$$\left[\frac{Y-1600}{400}\right]=\left[\frac{Y}{100}\right]-16 \quad \text{.....(2)}$$

Taking (1) & (2)

$$\text{No. Of Leap years } L=\left[\frac{Y}{4}\right]-400-\left[\frac{Y}{100}\right]+16+\left[\frac{Y}{400}-4\right]$$

$$=\left[\frac{Y}{4}\right]-\left[\frac{Y}{100}\right]+\left[\frac{Y}{400}\right]-388$$

For 2023, $\left[\frac{2023}{4}\right]-\left[\frac{2023}{100}\right]+\left[\frac{2023}{400}\right]-388$

=505-20+5-388=102

$D_{2023} \equiv D_{1600}+(2023-1600)+102 \pmod 7$

$\equiv 3+423+102 \pmod 7$

$3 \equiv 528 \pmod 7$

Therefore $D_{2023}=3$(i.e Wednesday)

To calculate March 1 of any year Y is based on this formula.

To calculate 1st day of any month 'm' satisfies the addition of (March-0, April-3, May-5, June-1,July-3,August-6, September-2,October-4,November-0,December-2,January-5,February-1) to weekday of March 1 of year which satisfies the formula

for m=1,2,3,.....,12 as $[(2.6)m-0.2]-2 \pmod 7$

Thus the number of the 1st day of mth month of the year Y is given by

$D_y+[(2.6)m-0.2]-2 \pmod 7$

For Example Dec 2021

$D_{2021}+[(2.6)10-0.2]-2 \pmod 7$

$\equiv 1+25-2 \pmod 7$

$\equiv 24 \pmod 7$

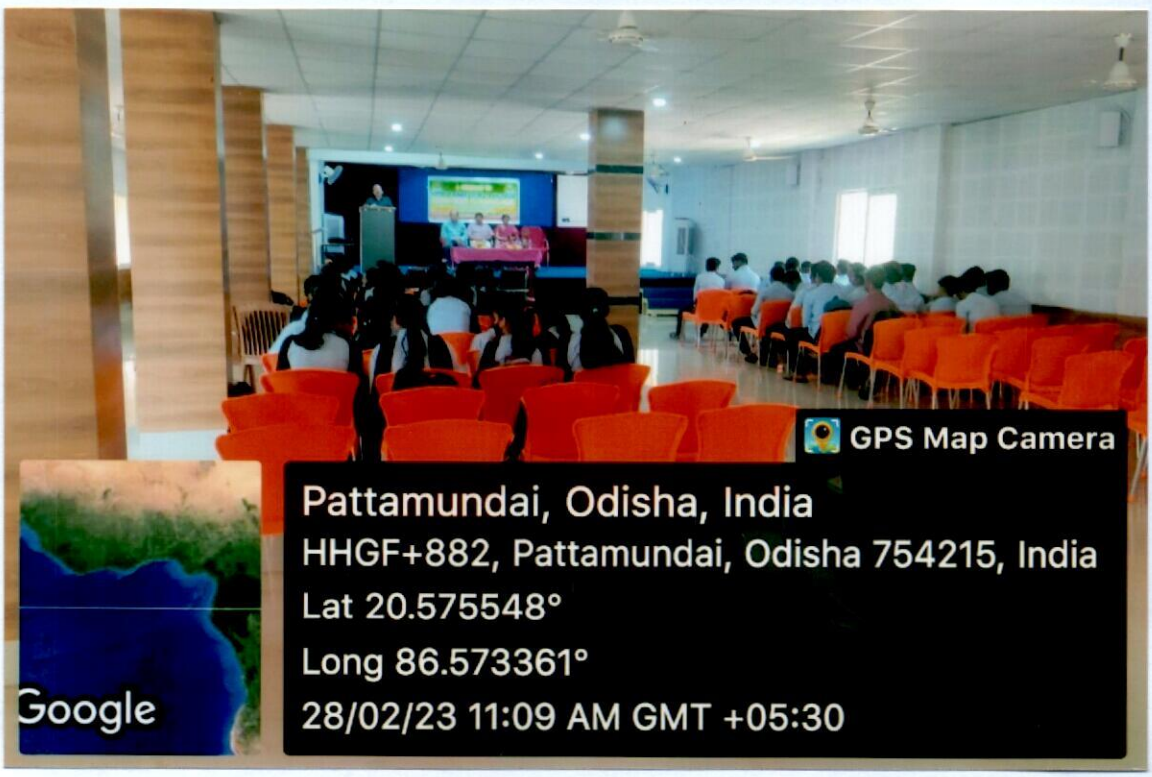
$\equiv 3 \pmod 7$

So Wed Day.

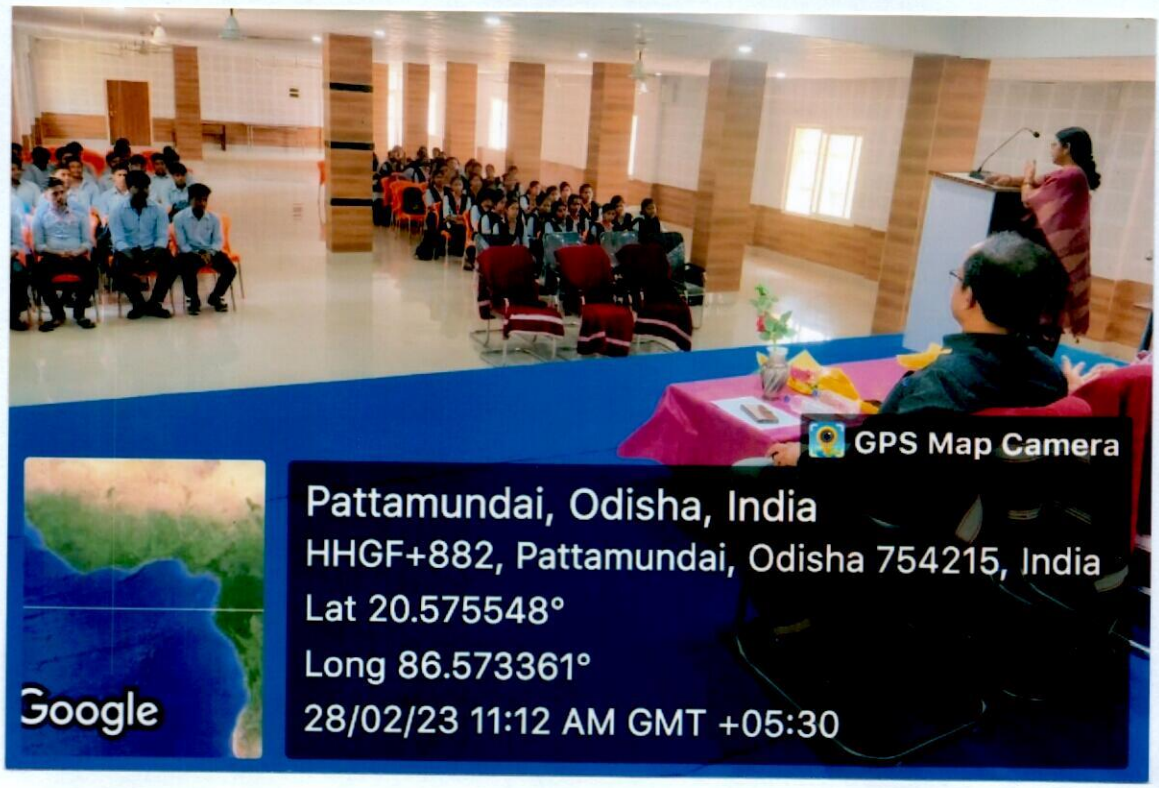
N. Samuel

28.2.23

Guest on the Dias (L-R): Dr Nirmala Kumar Sahoo, Faculty of Mathematics, Dr Nabaghana Samal, Resource Person, Dr Premalata Rout, Principal and Sri Arabinda Pandab, HOD Mathematics



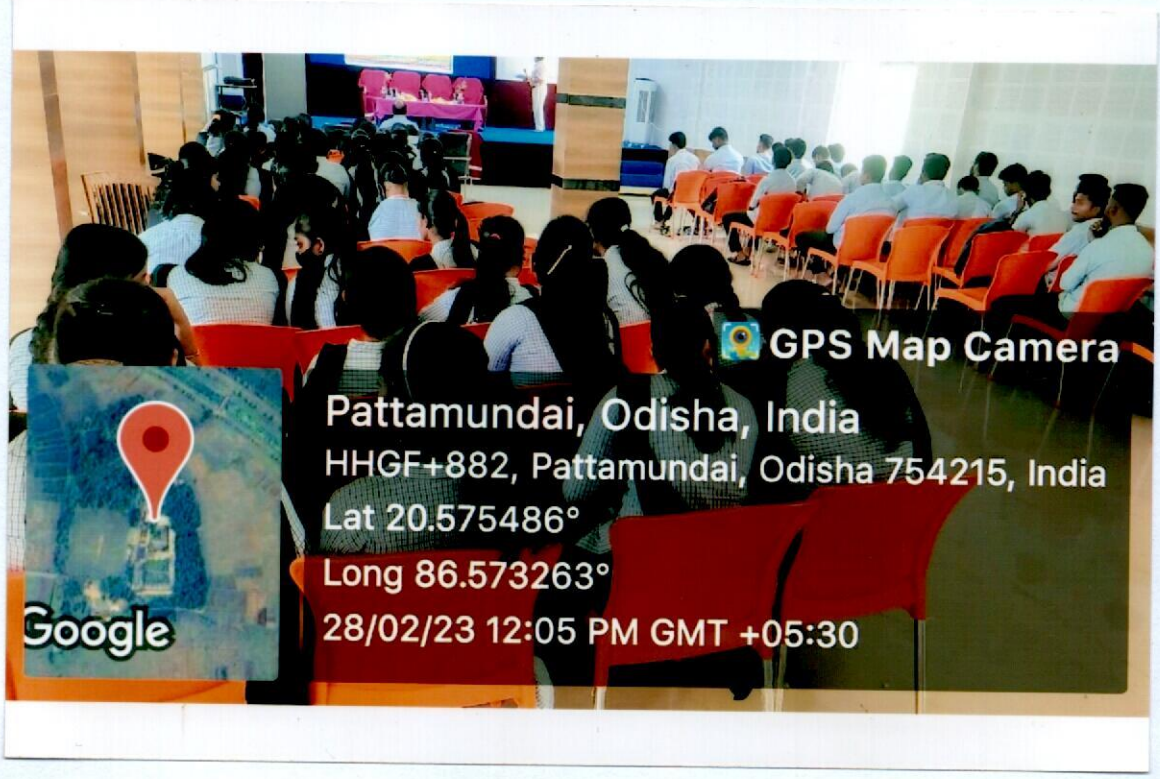
Welcome Address by Sri Arabinda Pandab



Presidential Address by Principal Dr Premalata Rout

Students Present in the Auditorium Hall.

Dr Samal, Resource Person Explains the Topic through marker and white board.



Students interaction with the Resource Person.

A DEPAERTMENTAL SEMINAR ON "HISTORY OF NUMBER SYSTEM & ITS APPLICATIONS"
On 28th February 2023
ORGANISED BY DEPARTMENT OF MATHEMATICS
PATTAMUNAI COLLEGE, PATTAMUNDAI,KENDRAPARA, ODISHA
ATTENDANCE SHEET OF RESOURCE PERSON & FACULTY MEMBERS

Sl.No	Name	Mobile No & e-mail Id	Signature
1	Dr. Nabaghana Samal	9937762415 n.samalmath1957@gmail.com	N. Samal 28.2.23.
2	Arabinda Pandab	9937254024 arabindapandab@gmail.com	
3	Nirmala kumar Sahoo	8974403754 nirmalakumarsahoo@gmail.com	
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A DEPAERTMENTAL SEMINAR ON "HISTORY OF NUMBER SYSTEM & ITS APPLICATIONS"
On 28th February 2023
ORGANISED BY DEPARTMENT OF MATHEMATICS
PATTAMUNAI COLLEGE, PATTAMUNDAI,KENDRAPARA, ODISHA
ATTENDANCE SHEET OF STUDENTS

Sl.No	Name	Roll No	Signature
1	Swagatika Maharana	BS(P)-20-083	Swagatika Maharana.
2	Arpita Dash	BS(P)-20-074	Arpita Dash
3	Smrutimayee parida	BS(P)-20-058	Smrutimayee parida.
4	Sujata Jena	BS(P)-21-038	Sujata Jena
5	Bijaya Laxmi Jena	BS(P)-21-022	Bijaya Laxmi Jena
6	Ruteraj Rout	BS(P)-20-054	Ruteraj Rout.
7	Prativa Priyadarshani Jena	BS(P)-20-006	Prativa Priyadarshani Jena
8	Lopamudra Das	BS(P)-21-080	Lopamudra Das
9	Arpita Padhi	BS(P)-21-058	Arpita Padhi
10	Simeswari Das	BS(P)-20-066	Simeswari Das
11	Sunita Kar	BS(P)-20-003	Sunita Kar
12	Sunita Behera	BS(P) 21-068	Sunita Behera
13	Subhashree Biswal	BS(P) 21-010	Subhashree Biswal

Sl.No	Name	Roll No	Signature
14	Thankita Das	BS(P)21-076	Thankita Das.
15	Raji pradhan	BSCP)21-073	Raji Pradhan
16	Sonali Jena	BS(P)22-019	Sonali Jena
17	Minati Giri	BS(P)22-009	Minati Giri
18	Sasmita Das	BS(P)22-041	Sasmita Das
19	Jayashree Rout	BS(P)22-063	Jayashree Rout
20	Madhusmita Behera	BS(P)22-064	Madhusmita Behera
21	Abhishek Sahoo	BS(P)22-026	Abhishek Sahu
22	[illegible]	BS(P)22-077	[illegible]
23	Ranjan Mandal	BS(P)22-082	Ranjan Mandal
24	Abhijit sahoo	BS(P)22-033	Abhijit Sahoo
25	Rohan Kumar Das	BS(P)22-040	Rohan Kumar Das
26	Debiprasad Rath	BS(P)22-018	Debiprasad Rath
27	Subrat Nayak	BS(P)22-049	Subrat Nayak
28	Subharaj Samal	BS(P)21-072	Subharaj Samal
29	Rashmiranjan Sethi	BS(P)21-054	Rashmiranjan Sethi

Sl.No	Name	Roll No	Signature
30	Rajkishore Mishra	BSP 21-005	Rajkishore Mishra
31	Manoranjan Sahoo	BS(P)20-059	Manoranjan Sahoo
32	Bijay Kumar Bhuyan	BS(P)-20-010	Bijay Kumar Bhuyan
33	Agish Sekhar Sethi	BS(P)-20-032	Agish Sekhar Sethi
34	Ramesh Kumar Jena	BS(P)-20-018	Ramesh Kumar Jena
35	Smruti Ranjan Giri	BS(P)-20-080	Smruti Ranjan Giri
36	Alekha kumar Swain	BS(P)20-071	Alekha kumar Swain.
37	Malaya Swain	BS(P)20-070	Malaya Swain
38	Jyotirmaya Behera	BS(P)22-072	Jyotirmaya Behera
39	Subhajeet Mahalik	BS(P)22-001	Subhajeet Mahalik
40	Pravat Kumar Patra	BS(P)22-074	Pravat kr Patra.
41	Srutirekha Sahoo	BS(P)22-052	Srutirekha Sahoo
42	Sangeeta Sahoo	BS(P)-22-053	Sangeeta Sahoo
43	Arpita Pradhan	BS(P)-22-035	Arpita Pradhan
44	Sangita Malik	BS(P)-22-031	Sangita Malik
45	Ankita Swain	BS(P)-22-039	Ankita Swain

Sl.No	Name	Roll No	Signature
46	Minakshi Das	BS(P)-22-047	Minakshi Das
47	Ananya Rout.	BS(P)-22-065	Ananya Rout.
48	Pragna paramita Rout	BS(P)-21-095	Pragna paramita Rout
49	Sasmita patra	BS(P)-21-088	Sasmita patra
50	Sasmita parida	BS(P)-21-084	Sasmita parida
51	Sukanya Biswal	BS(P)-21-074	sukanya Biswal
52	Swapna Rani Behera	BS(P)-22-079	Swapna Rani Behera
53	Kalpana Sahoo	BS(P)-22-066	Kalpana Sahoo
54	Manisha Bhuyan	BS(P)-22-029	Manisha Bhuyan
55	Sradhanjali Rana	BS(P)-20-002	Sradhanjali Rana
56	Ankita parida	BS(P)-20-004	Ankita parida
57	Pratima Sahoo	BS(P)-20-048	Pratima Sahoo
58	Rajalaxmi Sahoo	BS(P)20-008	Rajalaxmi Sahoo
59	Lipsarani Dash	BS(P)20-013	Lipsarani Dash.
60	Sonali Gerua	BS(P)20-085	Sonali Gerua
61	Ankita Jena	BS(P)20-035	Ankita Jena

Sl.No	Name	Roll No	Signature
62	Anisha Das	BSC(P) 22-054	Anisha Das
63	Bispali Mahakud.	BS(P)-20-046	Bispali Mahakud
64	Sahil kumar Lenka	BSC(P) - 20-043	Sahil kumar Lenka
65	Adarsh Padhiheri	BSC(P) 21-049	Adarsh Padhiheri.
66	Sourav Kr Lenka	BS(P)20-070	Sourav Lenka
67	Jiu malik	BS(P)20-028	Jiu malik
68	Subhrakanta Behera	BS(P) 20-044	Subhrakanta Behera
69	Surajkumar Sethi	BS(P) 20-037	Surajkumar Sethi
70	Soubhagya Ranjan Biswal	BS(P) 20-045	Soubhagya R. Biswal
71	Abinash Sahoo	BS(P) 20-051	Abinash Sahoo
72	Sourav Sethi	BSC(P) 21-032	Sourav Sethi
73	Sandhyarani Malik	BSC(B)-21-013	Sandhyarani Malik
74	Sukanya patra.	BS(B)-21-001	Sukanya patra.
75	Kalpataru Nayak	BSC(B)-21-002	Kalpataru Nayak
76	Swati Subhra Jena.	BSC(B)-21-038	Swati Subhra Jena
77	Suchitra patra	BSC(B)-21-017	Suchitra Patra

Sl.No	Name	Roll No	Signature
78	Basudev Parida	BS(P)-21-045	Basudev Parida
79	Liza Sethi	BS(P)21-028	Liza Sethi
80	Sourav Bhuyan	BS(P)-21-060	Sourav Bhuyan
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ସମାଜ

ଗଣିତ ବିଭାଗ ଆଲଚୋନାଚକ୍ର

ପଟ୍ଟାମୁଣ୍ଡାଇ, ୨। ୩(ନିପ୍ର): ପଟ୍ଟାମୁଣ୍ଡାଇ ମହାବିଦ୍ୟାଳୟ ଗଣିତ ବିଭାଗ ପକ୍ଷରୁ ଜାତୀୟ ବିଜ୍ଞାନ ଦିବସ ଅବସରରେ ସଂଖ୍ୟା ପଦ୍ଧତିର ଇତିହାସ ଓ ଏହାର ପ୍ରୟୋଗ ଶୀର୍ଷକ ଆଲୋଚନାଚକ୍ର ଅନୁଷ୍ଠିତ ହୋଇଯାଇଛି ।

ମହାବିଦ୍ୟାଳୟ ଅଧ୍ୟକ୍ଷା ଡ. ପ୍ରେମ ଲତା ରାଉତଙ୍କ ପୌରୋହିତ୍ୟରେ ଅନୁଷ୍ଠିତ ଆଲୋଚନାଚକ୍ରରେ କେନ୍ଦ୍ରାପଡ଼ା ମହାବିଦ୍ୟାଳୟର ପ୍ରାକ୍ତନ ସହକାରୀ ପ୍ରଫେସର ଡ. ନବଘନ ସାମଲ କ୍ୟାଲେଣ୍ଡରର ଦିନ ନିରୂପଣ କରିବାରେ ସଂଖ୍ୟା ପଦ୍ଧତିର ପ୍ରୟୋଗ ଯଥାର୍ଥ ବୋଲି ବିଶ୍ଳେଷଣ କରିଥିଲେ । ପଟ୍ଟାମୁଣ୍ଡାଇ ମହାବିଦ୍ୟାଳୟ ଗଣିତ ବିଭାଗ ମୁଖ୍ୟ ଅଧ୍ୟାପକ ରବୀନ୍ଦ୍ର ପଣ୍ଡା ସ୍ୱାଗତଭାଷଣ ପ୍ରଦାନ କରିଥିଲେ ।

Odia Daily" The Samaj" dated 03.03.2023