**State level Webinar**

on

***"Securing image transmission through encryption emphasizing on Partial Image Encryption"***

**on**

**1st and 2nd July, 2020 via Zoom, 3 to 5 pm**

Organized by

**Department of Computer Science, Physics**

in association with

**The Internal Quality Assurance Cell**

**Prasanta Chandra Mahalanobis Mahavidyalaya**

The department of Computer Science and Physics, Prasanta Chandra Mahalanobis Mahavidyalaya in association with the Internal Quality Assurance Cell (IQAC) of the college organized a webinar "*Securing image transmission through encryption emphasizing on Partial Image Encryption"* on 1st to 2nd July, 2020 via Zoom, 3 to 5 p.m.

The Webinar began with a welcome address by **Dr. Shyamal Karmakar, Principal** of Prasanta Chandra Mahalanobis Mahavidyalaya. Mrs. Suparna Dey Convenor of the webinar welcomed all with a short note.

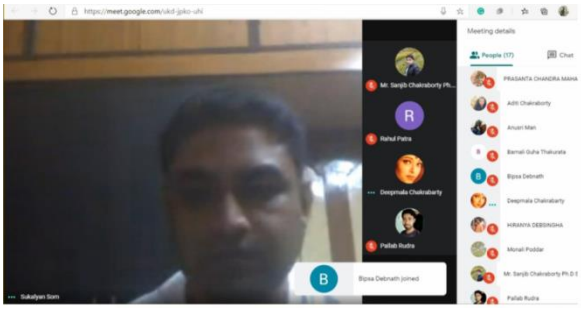
**Dr. Sukalyan Som,** Assistant professor of Barrackpore Rastraguru Surendranath College spoke on techniques of image encryption, partial image encryption scheme .
The lectures were highly informative which were followed by lively discussions.

Mr. Samrat Sur was also the co-host along with Mrs. Suparna Dey who hosted the webinar. Ms. Deepmala Chakrabarty coordinated the question answer session. The webinar was well attended by faculty, scholars and students from various institutions. Its recorded video was also shared on Youtube channel of college. One hundred and four (Faculty in College or University – 49, Student PG – 22, Student UG – 20, others – 13) persons attended the webinar in this platform (Zoom). The webinar ended with vote of thanks by IQAC Coordinator, Dr. Kamala Mitra.


**The Announcement**

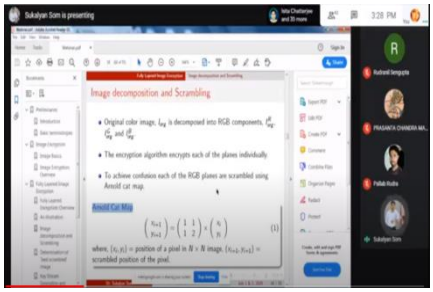
**Dr. Shyamal Karmakar**
**Principal**

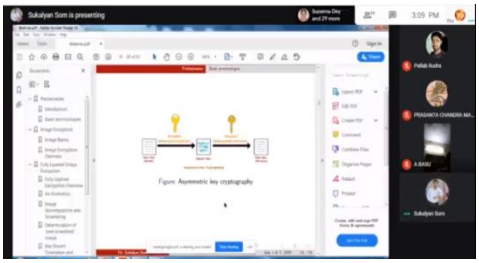
**Dr. Kamala Mitra**
**IQAC Coordinator**



**Dr. Sukalyan Som**
**Invited Speaker**


**Mrs. Suparna Dey** **Mr. Samrat Sur** **Ms. Deepmala Chakrabarty**
**Department of Computer Science**


Sukalyan Som is presenting
Image decomposition and Scrambling
Original color image, $I_{org}$ is decomposed into RGB components, $I^R_{org}$ and $I^B_{org}$
The encryption algorithm encrypts each of the planes individually.
To achieve confusion each of the RGB planes are scrambled using Arnold cat map.
Arnold Cat Map
$\begin{pmatrix} x_{n+1} \\ y_{n+1} \end{pmatrix} = \begin{pmatrix} 1 & 1 \\ 1 & 2 \end{pmatrix} \times \begin{pmatrix} x_n \\ y_n \end{pmatrix} \pmod{N}$ (1)
where, $(x, y)$ = position of a pixel in $N \times N$ image, $(x_{n+1}, y_{n+1})$ = scrambled position of the pixel.


Sukalyan Som is presenting
Figure: Asymmetric key cryptography