

BANWARILAL BHALOTIA COLLEGE

GOVT. SPONSORED UG & PG COLLEGE (Affiliated to KNU) Asansol, West Bengal, India

ICT BASED TEACHING-LEARNING AND EVALUATION PROCESS

AY 2019-20 UPTO DEC 31, 2020 (PREPARED FOR NAAC AQAR CRITERIA 2 REQUIREMENT)

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ICT BASED TEACHING-LEARNING AND EVALUATION PROCESS

 $AY\,2019\text{-}20\,$ UPTO DEC 31, 2020 (prepared for Naac Aqar Criteria 2 requirement)

2.3.1 Percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc. (current year data)

Number of teachers on roll	Number of teachers using ICT (LMS, eResources	ICT tools and resources available	Number of ICT enabled classrooms	Number of smart classrooms	E-resources and techniques used
Total - 141	Total - 141	Total - 121 See Annexure I and II below	Total -15 (including smart classrooms)	Total -5	B.B. College e-knowledge Content- 66 + B.B. College e-video Content-55 See Annexure III and IV below for additional information

Annexure I

ICT tools and resources available

Computers with Internet facilities for students and teachers	100
Projectors and visualizers	15
Smart Boards / Interactive Whiteboards	5
Digital Pen+ Electronic Writing Pad	1

Basic ICT Tools	Equipments for Innovative Teaching Learning	Facilities for ICT based Teaching and CIE
 Desktops & Laptops LCD Projectors and Visualizers Smartboards/ Interactive Whiteboard Digital Pen and 	 Scanner Printer Hard Drives and Pen Drives DVDs and CDs Digital Camera 	 ICT enabled Classrooms Departmental seminar rooms and seminar hall with projectors Computer Centre cum Examination Hall Central library facility Language Lab
Tablet/electroni c writing pads	Microphones	Recording Facility

Annexure II

Institutional Infrastructure for ICT based Teaching-Learning

Total Number of Computers with internet facilities for Academic Purpose	170
Available bandwidth (MGBPS)	50 Mbps
Computers and Internet facilities for staff	70
Computers and Internet facilities for student	100
Seminar Hall with projector and smart board facility	01
Lecture Room cum Meeting Room equipped with projector, smart board and recording facility (IQAC Meeting Room)	01
Partially automated central library facility	01

Annexure III

E-Resources and Techniques used

Softwares and ICT Tools Frequently Used for e-Content Development and CIE	e-Content Information Source by B.B. College (Links attached)	Open e-Resource and Courseware Information Frequently used (<u>Links</u> provided in College Website)
Online web meeting platforms like Google Meet, Zoom, UpGrad, MSTeam Google Classrooms, Telegram Channels, WhatsApp groups Google Forms, Internal online-exam facility, KAHOOT Video/Audio/ PowerPoint presentations and SlideShare Spoken Tutorial Audio Books Scientific softwares and Simulation softwares Scanner apps like CamScanner, Adobe scanner OBS Studio	B.B. College YouTube channel (Link) B.B. College e-knowledge Content Link (Link) Electronic Resources for Remote Learning during COVID-19 (Link) Youtube Channels and personal websites by teachers (See Annexure IV) B.B. College Central Library e-Content Access (Link) WebOPAC (Link) Ask the Librarian (Link)	JHU press/Project Muse Cambridge Core Gale Cengage SCRIBD Class Central Massive Open Online Courses National Digital Library of India (NDL) Directory of Open Access Journals (DOAJ) Directory of Open Access Books National Programme on Technology Enhanced Learning (NPTEL) Shodhganga-a reservoir of Indian theses e-PG Pathshala Open Access Thesis & Dissertations Open Knowledge Repository - World Bank Legal Information Institute of India The OAPEN Foundation PubMed Central (PMC) Project Gutenberg HighWire Southern Connecticut State University AGRIS Science Direct Open Access Content AidData ILOSTAT Oxford Open Project Euclid SpringOpen Journals Taylor & Francis Open Access Cambridge University Press VIDYAMITRA Public Books Database Open Access Button PDF Drive Digital Archives Guide Seagull's library of world literature

Annexure IV

ICT BASED TEACHING IN B.B. COLLEGE, ASANSOL

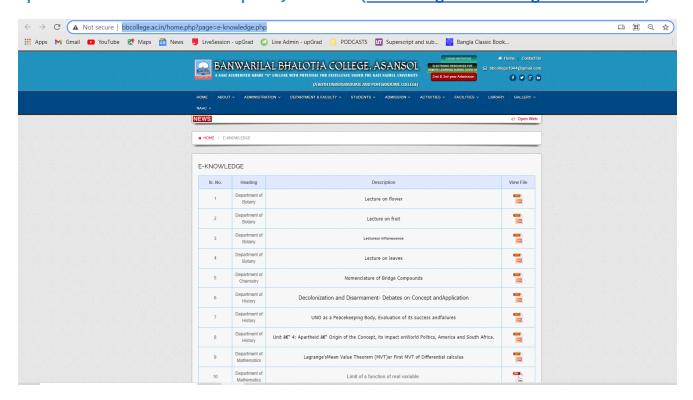
Offline Teaching and Student Assessment			
Offline ICT based Class Teaching	 Powerpoint based lectures in Departments and Seminar Room Student Projects using ICT tools Computer based language lab Central Library Facilities (Departmental Libraries are offline) Open e-Resource and Courseware availed through college computers Field work 		
Offline ICT based Student Evaluations	 Student Seminars using ICT tools Online Internal Assessments conducted in College Computer Centre Fieldwork projects 		
Online ICT based Class Teaching	 ➤ Through online meeting platforms Google Meet upGradhttp://meet.google.com Zoom Cisco Webex TeamLink - Free Video Conferencing & Web Conferencing ➤ Contents (digital and scanned) and online open source content links by teachers and shared through B.B. College website e-knowledge and COVID initiative Through Personal Websites WhatsApp Groups Google Classrooms Telegram Channels Through emails ➤ Through video content B.B. College Youtube Channel Teacher's Personal Youtube Channels 		

Online ICT based Student Evaluations

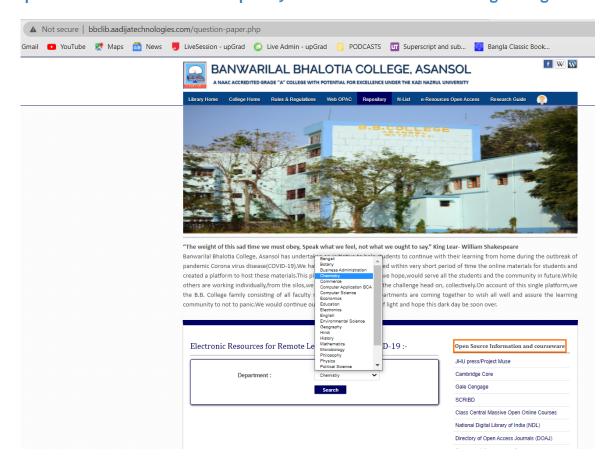
- Departmental collaborative Question Paper preparation and internal assessment works using Google-Forms, -Docs, Spreadsheets and MSOffice apps
- Examination notices via WhatsApp groups, mails, <u>Google</u> classrooms,
- > Viva voce/ student presentations via online meeting apps
 - Google Meet, upGrad, Zoom, Cisco Webex, TeamLink
- > Online assessments through
 - Google-Forms
 - Google classrooms
 - Testmoz Powerful but Simple Test Generator

SCREENSHOTS/EVIDENCES

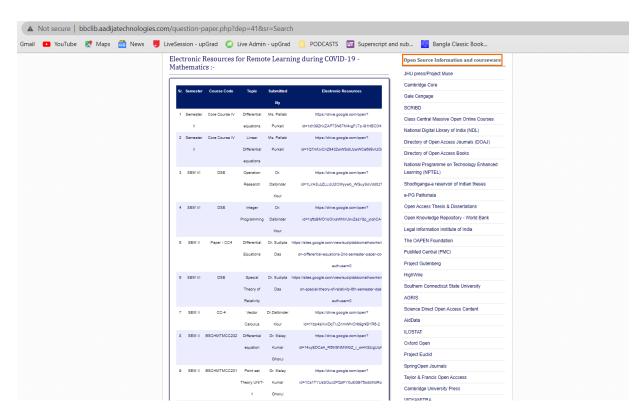
Open access e-Contents developed by teachers (B.B. College e-knowledge Content Link)



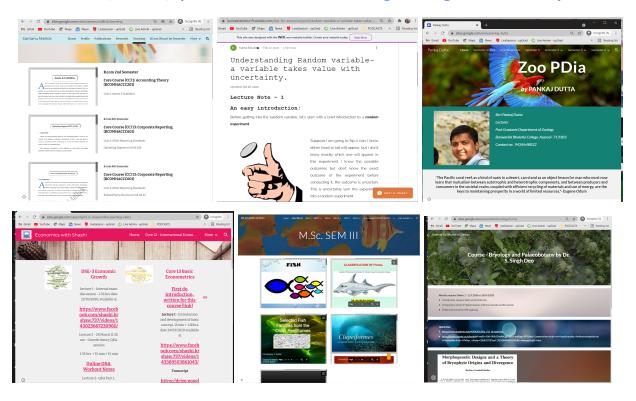
Open access e-Contents developed by teachers for remote learning during COVID outbreak



Example: Screenshot of few such Departmental contributions by Dept. of Mathematics



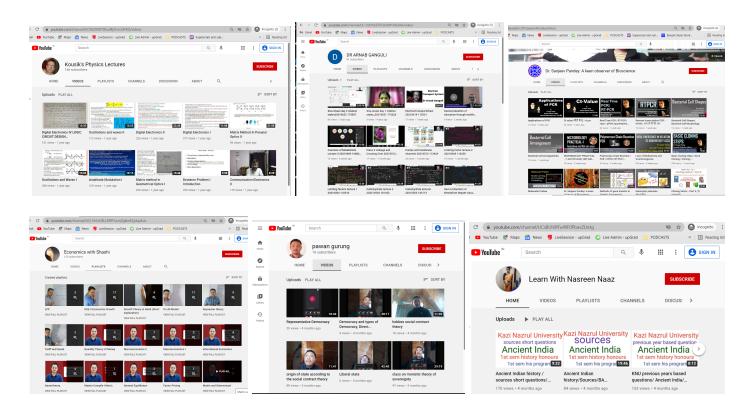
e-Contents by Faculty (Personal Websites/ Web Pages/ Blogs/Web content)



https://sites.google.com/view/klmphysics/home	Dr. Koushik Mukherjee, Physics Dept.
https://www.blogger.com/blog/posts/1411752939616525296?tab=wj https://www.ndl.gov.in/result?q={%22t%22:%22search%22,%22k%22:%2 2sanjeev%20pandey%22,%22s%22:[],%22b%22:{%22filters%22:	Dr. S. Pandey, Botany Dept.
https://sites.google.com/view/sudiptabbcmathworks/home?authuser=1	Dr. Sudipta Das, Mathematics Dept
https://sites.google.com/view/arnabganguli/home	Dr. Arnab Ganguly, Zoology Dept.
https://sites.google.com/view/commerceplatform	Dr. Amalendu Samanta, Commerce Dept
https://sites.google.com/view/pankaj-dutta	Pankaj Dutta, Zoology Dept.
https://sites.google.com/view/dr-chandana-singha/home	Dr. Chandana Singha, Geography Dept.
https://kuntalstatistics19.wixsite.com/stat-for-everyone	Kuntal Bakuli, Statistics Dept.
https://sites.google.com/view/shashi-kr-shaw/online-teaching-video	Shashi Kumar Shaw, Economics Dept.
https://sites.google.com/view/kajalmaji/home	Kajal Maji, Physics Dept.
https://sites.google.com/view/ssdeo29/home https://sites.google.com/view/ssdeobryology/home	Dr. S.Singh Deo, Botany Dept.
https://sites.google.com/view/sangitalahiryzoologica/home	Dr. Sangita Lahiri, Zoology Dept.
https://sites.google.com/view/santanumallick/home	Santanu Mallick, Commerce Dept
https://sites.google.com/view/websiteofdrbinitadutta/	Dr. Binita Dutta, Chemistry Dept.
https://sites.google.com/view/atrayee/home	Dr. Atrayee Dey, Zoology Dept.
https://sites.google.com/view/rajzoo/home	Dr. Rajrupa Ghosh, Zoology Dept.

Personal Youtube Channels by B.B. College Faculties

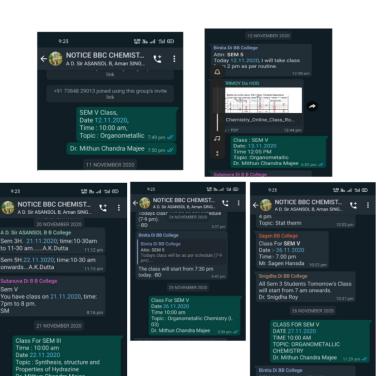
https://www.youtube.com/channel/UCc8bnFBB4m8r-65b2rRr8zA	Dr. S. Pandey, Botany Dept.
https://www.youtube.com/channel/UCtIk2X0DTIDuxNj5Cm3dYKQ	Dr. Koushik Mukherjee, Physics Dept.
https://www.youtube.com/channel/UC-tnX16bFZ97e6JtM1AbOAA https://www.youtube.com/channel/UC-LrU5hjjAk6V32zieu15kg	Dr. Arnab Ganguly, Zoology Dept.
https://www.youtube.com/channel/UCL5h5cD8LLRTfR1wmZgkbdQ/playlists	Shashi Kumar Shaw, Economics Dept.
https://www.youtube.com/channel/UCEkPNxqqSbIPLBXdBMLHcsQ	Pawan Gurung, Dept. of Pol. Science
https://www.youtube.com/channel/UCcBnecw52IqjN0kHa9fWyPg	Dr. S. Singh Deo, Botany Dept.
https://www.youtube.com/channel/UCBazQBbRPYmqdOzgmIVIRlQ	Dr. S. Chatterjee, Dept. of History
https://www.youtube.com/channel/UCu435vdw09cPCWatT-iEzIg	Dr. Sangita Lahiri, Zoology Dept.
https://youtube.com/channel/UC_EZdmf5XRXYrRKtVAvaSZg	Sayantan Dutta, Env. Science Dept.
https://www.youtube.com/channel/UCDAc3paZRBrGeVd1Jvp9DUQ	Dr. Atrayee Dey, Zoology Dept
https://www.youtube.com/watch?v=ME1cKc8BHjE	Sayantani Roy, Geography Dept.
https://www.youtube.com/channel/UCPtwfvTzvGEPlsxQVH758hw	Dr. A. Samanta, Commerce Dept
https://www.youtube.com/channel/UCsBUh0fFu49F0PbavZLtetg	Nasreen Khatoon, Dept. of History
https://www.youtube.com/channel/UCHTVhDDMZoGkk7LvJ3uU7kw/videos	Santanu Mallick, Commerce Dept
https://www.youtube.com/watch?v=ME1cKc8BHjE https://www.youtube.com/channel/UCPtwfvTzvGEPlsxQVH758hw https://www.youtube.com/channel/UCsBUh0fFu49F0PbavZLtetg	Sayantani Roy, Geography Dept. Dr. A. Samanta, Commerce Dept Nasreen Khatoon, Dept. of History



Screenshots of Some YouTube Channels by B.B. College Faculties

Online Departmental Class Notices





Physics Department

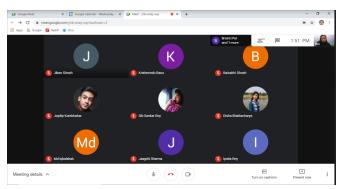
Chemistry Department

Final Schedule with linkID of upcoming online sixth sem classes

Paper name	Portion of the syllabus	Allotted Teacher's Name/Meeting URL	Date and Time
Numerical Analysis	Approximation of numbers, significant digits, Loss of significance, Algebraic manipulation for avoiding loss of significance. Errors: Absolute, Relative and Percentage errors; Round off errors; propagation of round off errors in arithmetic operations; Inherent errors in numerical methods.	BR(BBC) https://meet.google.com/bst-pjuq-dxb	From 3 pm to 4 pm on 13/06 & 14/6
alysis	Polynomial Interpolations: Existence and uniqueness of interpolating polynomials, error in interpolation, Lagrange's interpolating formula, Newton's divided difference interpolating formula, properties of divided differences, forward and backward difference operators and their relations, Newton's forward and backward difference interpolation formulae. Central difference and averaging operators, central interpolation formulae: Statement of Gauss, Stirling and Bessel's formulae and their applications. Concept of piece-wise polynomial interpolation, Idea of Inverse interpolation. Error in interpolation. Numerical differentiation based on equi spaced argument values. Error in differentiation formulae.	F B (AGC) https://meet.google.com/cam-vufd-mag	From 8 am to 9 am on 15/6, 16/6, 17/6, 18/6 & 19/6
	Numerical solution of non-linear equations: Solution of algebraic transcendental equations (real roots only): (i) Method of Bisection,(ii) Regula Falsi Method (iii) Secant Method (iv) Newton – Raphson Method (v) Fixed point iteration method. Convergences and rate of convergence of these methods.	PP(BBC) https://meet.google.com/xdv-hygt-osr	From 9 am to 10 am on 17/6, 19/6 &22/6
	Solution of a system of linear algebraic equation:Gauss' Elimination and Gauss Jordan methods, Pivoting methods, Jacobi and Gauss-Seidel methods with convergence criteria.	AB(BBC) https://meet.google.com/yib-acsq-uyj	From 7pm to 8pm On 24/6 & 25/6

Mathematics Department

Online Class Evidences

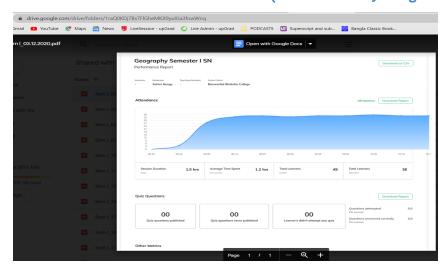




Mausumi Ghosh, Department of Economics

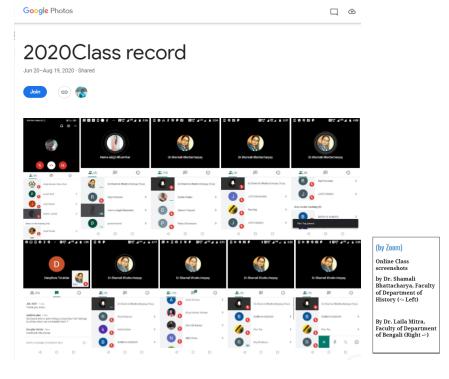
Dr. Sandip Chatterjee, Department of History

(Online Class by Google Meet)



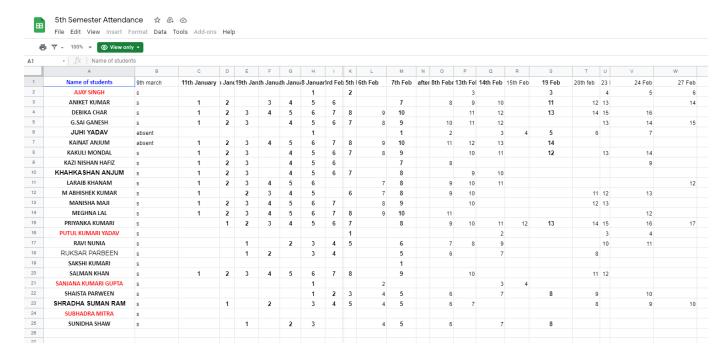
(by upGrad)

Online Class by Sohini Neogi, Faculty of Department of Geography

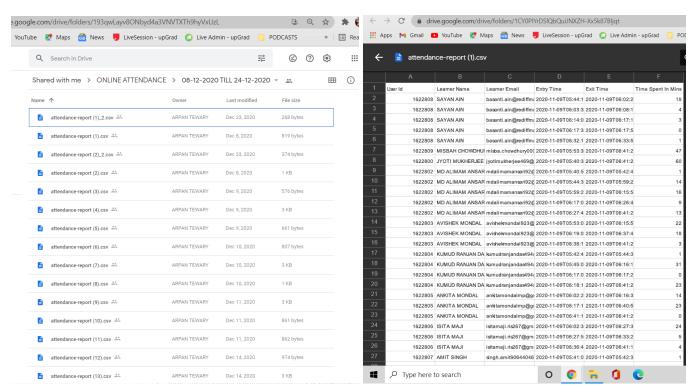




Online Class Attendance Recording



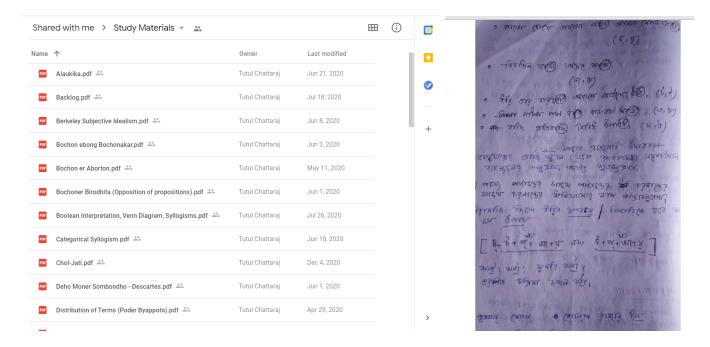
Online Class Attendance Recorded by Shashi Kumar Shaw, Faculty of Department of Economics



Automated upGrad Class Attendance Record files byArpan Tewary, Faculty of Department of Computer Science

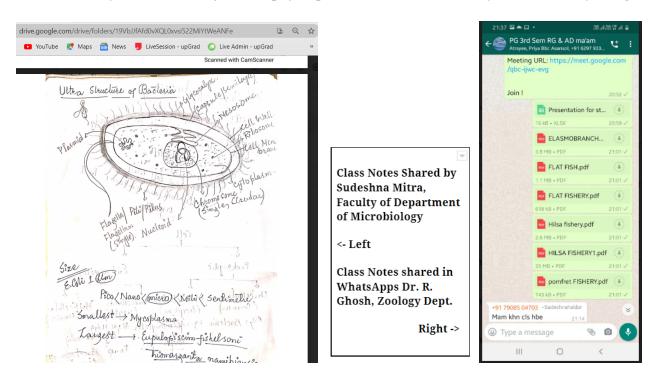
Limited access e-Contents by Faculty

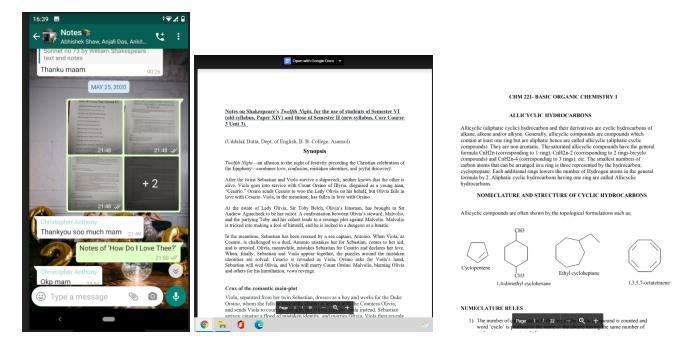
During the prolonged lockdown due to the current COVID-19 pandemic, the regularity of Teaching-Learning was maintained not only by providing open access e-contents, our faculties regularly have taken classes. Besides, regular class notes were developed and distributed by our faculties through personal google classrooms, telegram channels and WhatsApp groups considering the fact that the offline access of library books was not possible by students during lockdown. Some screenshots of such limited access e-contents by our faculties have been provided below.



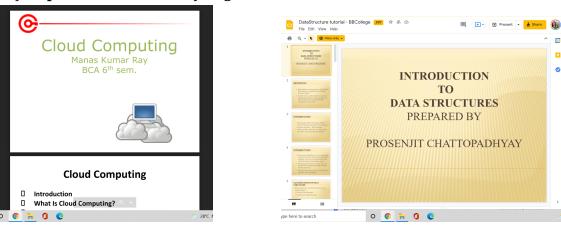
Notes Shared by Tutul Chattaraj, Philosophy Dept.

Scanned note by Dr. Ritwik Roy, Bengali Dept.



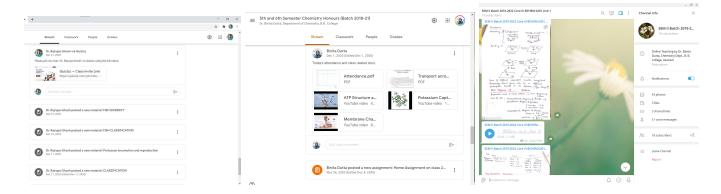


Class Notes by Saswati Nayek (Left), Dr. Uddalak Dutta (middle), Department of English and Dr. Snigdha Roy, Department of Chemistry (Right)



Class Notes by Manas Ray (MSPowerPoint) and Prasenjit Chattopadhyay (Google slides), BCA Dept.

Limited access e-Contents through (Personal Google Classrooms and Telegram Channels)

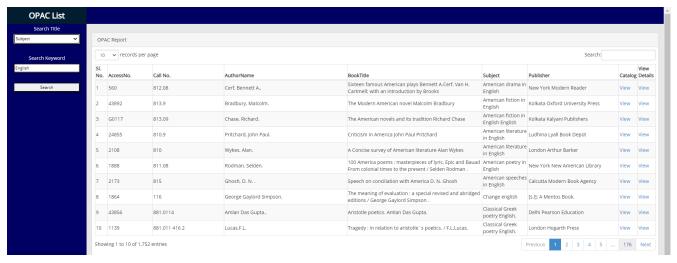


Class Notes by Dr. Rajrupa Ghosh, Zoology Dept.(Left) and Dr. Binita Dutta (Chemistry Dept.) (rest two)

B.B. College Central Library Facility and WebOPAC

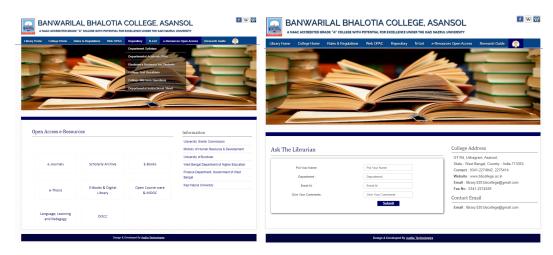


Screenshots of the e-Content and WebOPAC webpages



Search response of the 'Subject: English' showing 1752 entries in WebOPAC

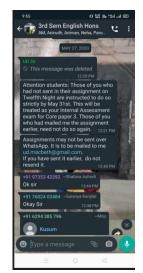
The e-Resource Information and 'User-Librarian Interface' in Website (Ask the Librarian)



Online Exam Notices (Through Departmental WhatsApp groups mostly)









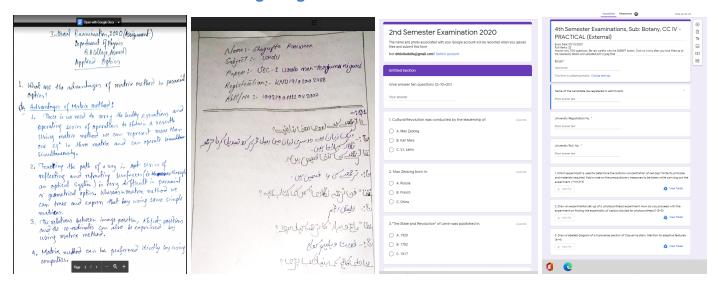
Geography Dept.

Pol. Science Dept.

English Dept.

Hindi Dept.

Online Student Assessments using Google Forms/ Scanned Docs



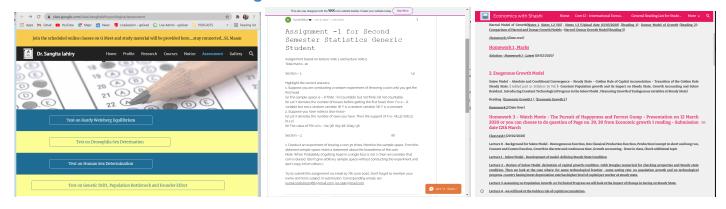
Physics Dept.

Urdu Dept.

Pol. Science Dept.

Botany Dept.

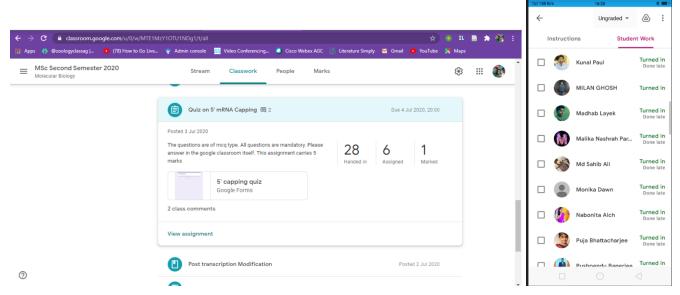
Online Student Assessments through Personal Websites



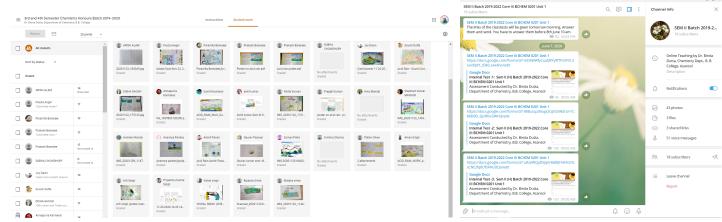
Exams by Dr. Sangita Lahiry, Zoology Dept by K. Bakuli, Statistics Dept.

by S.K. Shaw, Economics Dept.

Online Student Assessments using Google Classrooms and Telegram Channels



Internal Assessment through google classroom: Zoology Dept (Left), Mathematics Dept. (Right)



Student Project and Internal Assessment through google classroom and Telegram Channel (Chemistry Dept.)

Offline ICT based Examination being conducted in Computer Centre, B.B. College



(Photo: Exam being conducted by Mathematics Department)