DANCHAKOT MAHAVIDYALAYA SARBARI, NETURIA, PURULIA

ESTD. 2000

REPORT ONGREEN/ENVIRONMENTAL AUDIT ACADEMIC PERIOD: 2022-'23



Prepared by The Green Audit Team Sidho-Kanho-Birsha University Purulia

May 14, 2024 Time	Schedule	Venue
11:30 AM	Introductory Meeting	Principal's Office
12:00 NOON	Meeting with Coordinator IQAC and Members	Principal's Office
12:00 NOON	Presentation by Convener of Green Audit Committee	Principal's Office
02:00 PM	Lunch	
02.30 PM	Interaction & Physical visit with Convener & Committee Members	Physical facility in and around the campus
03.00 PM	Visit to Campus	
04:45 PM	Exit Meeting	Seminar Hall, Academic Building
05:30 PM	Tea	

Schedule for Environmental/Green Audit

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Dr Subrata Kr Dey Professor in Chemistry & Head-in-Charge of Environmental Sc. Sidho-Kanho-Birsha University Purulia

Dr. Subrata K. Dey Processor & Head Derochaerd of Chemistry Sidho Kanho-Birsha Universit Tanufia-723104- W.B.

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Dr Apurba Ratan Ghosh Professor & Head Deptt, of Environmental Science The University of Burdwan Burdwan

Professor & Head Deptt. Enviornmental Sc. The University of Burdwan Burdwan, W.B.

14.05.2029

Tapan Kumar Hazra Inspector of Colleges

Sidho-Kanho-Birsha University

Purulia



I. Introduction

Panchakot Mahavidyalaya, Sarbari, Neturia, Purulia,a co-educational HE Institution came under the affiliation of the University of Burdwansince its establishment on 2000, but later became affiliated to SKB University from 2011.College was established by the generous and enthusiastic people of the local area. The establishment of Panchakot Mahavidyalaya, Sarbari, Neturiastands as a testament to the commitment to educational accessibility, addressing the needs of the local students and fostering a conducive environment for higher learning.Now, College offers 10 UG Hons. Courses and 6 Program Courses; right now there are 55 full-time teaching faculty, including 29 SACT serving in teaching-learning system. Since inception College is maintaining its academic and administrative excellence, and has been continuously upgrading the curricula and infrastructure in order to improve the quality of education.

Now, the College voluntarily has started the Environmental/Green audit as well as academic& administrative audit for the last year2022-'23 to look into its strengths and weaknesses and identify the scope of further improvement.

Audit Committee

The authority of the SKB University has constituted a three members committee to conduct Environmental/GreenAudit of the Panchakot Mahavidyalaya, Sarbari, Neturia, Purulia. The Audit Committee comprises the following members:

Dr Subrata Kr Dey, Professor in Chemistry &Head-in-Charge of Environmental Sc., Sidho-Kanho-Birsha Universit, Purulia

Dr ApurbaRatan Ghosh, Professor & Head, Deptt. of Environmental Science, The University of Burdwan, Burdwan

Tapan Kumar Hazra, Inspector of Colleges, Sidho-Kanho-Birsha University, Purulia

II. Objective & Scope of the Audit

Members along with the Principal,Dr Saptarshi Chakrabortyin presence of Convener of Green Audit Committee and IQAC members at a preliminary meeting, held on 14-05-2024 at 11.30 am, outlines the broad objectives of the environmental audit as an assessment of the College. Accordingly, the audit team members decided to look into the prevailing situation at the College along the following aspects in course of the audit.

The team is empowered and expected to express their views and give suggestions for the improvement of the systems being followed by the College.



II. Executive Summary

Panchakot Mahavidyalaya, Sarbari, Neturiastarted on 2000. Initially, it was under the affiliation of the University of Burdwan, but later came under the affiliation to SKB University from 2011.

During First Cycle on 2015, College awarded Bby NAAC, now is preparing for Second Cycle of NAAC accreditation.

In accordance with the "Format of Green Audit: Questionnaire",Panchakot Mahavidyalaya, Sarbari, Neturia, isperformed the audit on14th of May, 2024. The purpose of the audit was to propose some best practices to be followed in near future in the campus which are in accordance with the Green Policy. With this in mind, the specific objectives of the audit were to evaluate the adequacy of the management control framework of Environment Sustainability.

The analysis was based upon a physical examination of the different sectors including green areasetc., and standards that govern the environmental sustainability, and on the results of preliminary interviews with personnel considered key in the environmental management in the campus.

The methodology used included the physical inspection of the campus, review of the relevant documentation and interviews.

III. Observations a. General

College has a total campus area of 7.4 acres, built up area 2.001 acres and green area of 4.901 acres. College has taken some efforts for sustainable development in the College campus and to maintain greenery.

1. College has constituted a team members to help the Audit Team members.

Some of the best practices such as maintaining tree plantation, introducing plastic free zone, celebration of World Environment Day, Earth Day, World Animal Welfare Day, etc., are followed in the campus organized by the different departments and NSS.

 College organises Tree Plantation Programs on regular basis; entire campus is divided into different plots for maintain the greenery as well as giving exposure to the students about biodiversity index.

 College has storing-cum-dumping pit. Disposal of all degradable and non-degradable solid wastes be followed through local panchayat.

5. E-waste is disposed through authorized License holder Hulladek Recycling Pvt. Ltd.

6. College has conducted Environmental Awareness programmes on regular basis for faculty enest and students, and involved the students in maintaining the cleanliness of the campus.

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7. College maintains the ecological balance in the campus through maintaining gardens.

8. Rainwater is collected in specific water tank and used for cleaning and gardening purposes.

9. College has taken initiative for preparation of composting pit/vermicomposting pit.

10. Proposal of preparation of definite Butter Fly Garden is initiated.

11. WB-PCB has installed weather monitoring station for monitoring ambient air quality measurement, etc.

12. College has organised workshop on Mushroom Cultivation and vermicomposting techniques.

13. College has installed one high mast solar lamp; College has procured one Green Generator for uninterrupted power supply.

On detailed review, it was observed that the college has already taken some measurements constitute "Green Audit Committee" to implement the Green Policy with applicable standards. In addition, College is taking care of to improve their efficiency, fairness and consistency.

Suggestions

1. College is requested to constitute the "College Environmental Committee" properly and reframe the Green/Environmental Policy. During formation of "College Environmental Committee" College should follow the composition, where Principal will act as Chairman and inclusion of student members from SEM I, III & V.

2. College is requested to maintain the gardens at different locations through students of different departments.

3. Medicinal Garden should be maintained properly.

4. Butterfly Garden be initiated in order for proper maintenance.

5. Students should be trained to handle the PBR through workshop etc., mapping of plants be done accordingly.

6. Safe disposal methods should be adopted for solid, liquid, wooden wastes, electrical wastes, etc., through proper disposal methods.

7. Existing composting be managed properly.

8. Formal MoU with Local Panchayat be maintained for long-term basis and periodical monitoring.

9.College may maintain 'Green Budget' for the said purposes.

10. Plantation program be monitored and periodical maintenance of plants be followed.



AUDIT FRAMEWORK AND DETAILED ANALYSIS

V. Detailed findings& Analysis

The following audit framework is used for conducting Green Audit during the period of 2022-'23. The framework also lists the findings and observations for every criterion.

Control objectives	Control(s)	Audit Observations
Maximize the proportion of waste that is recycled & minimize the quantity of non-recyclable refuse	Reduce the absolute amount of waste that it produces from the Institute & Staff offices.	The College has used some control measures to reduce the waste that it produces from the departments, staff offices, inside Campus, <i>etc.</i> Segregation method is followed properly,
	Make full use of all recycling facilities provided by City Municipality and private suppliers, including glass, cans, white, coloured and brown paper, plastic bottles, batteries, print cartridges, cardboard and furniture.	College should dispose all wastes through local panchayat.
	Compost, or cause to be composted, all organic waste, green waste and un- recycled cardboard produced in or collected from kitchens, gardens, offices and rooms.	The College uses different bins for disposal of different types of wastes. The fallen dead leaves from the garden be managed properly in the composting/cistern pit.
	Recycle or safely dispose of white goods, computers and electrical appliances.	Safe disposal methods should be adopted for electrical wastes, printer cartridges, etc., through proper disposal methods.
	Use reusable resources and containers and avoid unnecessary packaging where possible	College has proposed some steps for management of vegetable, food wastes produced from canteen.
	Provide sufficient, accessible and well- publicized collection points for recyclable waste, with responsibility for recycling clearly allocated	The College has limited scope of accessible and well-publicized collection points for recyclable waste.
Minimize the quantity of wastes during special events/ occasions	Make specific arrangements for events, such as cultural Events, internal and external seminars and conferences, where significant recyclable waste is likely to be produced, in order to both minimize the waste produced and maximize what is recycled/reused	Amount of wastes generated during special events or occasions, such as Cultural Events, International and National seminars and Conferences, etc., be disposed through own system



Control objectives	Control(s)	Audit Observations
	Promote reuse of items and waste recycling among staff, students and conference guests through training, posters and incentives	The College has limited scope of reuse of items and waste recycling among staff, students and conference guests through some incentives.
	Dispose all waste, whether solid or otherwise, in a scientific manner and ensure that it is not released directly to the environment	Yes, the College follows environment friendly disposal management system and ensures that it is not released directly to the environment.
Reduce cncrgy consumption, especially of energy derived from fossil fuels	Support renewable and carbon-neutral electricity options on any energy- purchasing consortium, with the aim of supplying all college properties with electricity that can be attributed to renewable and carbon-neutral sources.	College follows paper-less communications through using digital media like Website notice, Whatsapp, generate e-noticefor academic/ administrative purposes.
	Appreciate that it is preferable to purchase electricity from a company that invests in new sources of renewable and carbon- neutral electricity	College has to maintain sources of renewable energy and carbon-neutral electricity like solar panels.
	Look into the possibility of on-site micro- generation of renewable electricity.	College has planned to installSOLAR PANNELS.
	Give preference to the most energy efficient and environmentally sound appliances available, this includes only using energy-saving light bulbs	The College is using LED light.
Effective energy consumption and management practices	Encourage staff, students and conference guests to save energy through visible reminders, incentives and information to increase awareness. This particularly concerns turning off electrical appliances when not in use in both communal and residential rooms	the misuse of electricity by turning off the appliances when not required through MCP. All the stakeholders are aware and doing their bests and practices to save electricity.
	Ensure that all electronic and electrical equipment's, such as computers, are switched off when not in use, and is generally configured in power saving mode when such option is available	Students and all the members are used to follow this practice.
	Ensure that the equipment's running on standby mode, reduce the energy consumption on standby mode or minimize the running of equipment's on standby mode	mechanism for most of the instruments; some of the equipment's



Control objectives	Control(s)	Audit Observations
	Purchase efficient and environmentally sound appliances and consider replacing old stock with 'greener', more efficient alternatives.	Presently, College is using environmental-friendly appliances as much as possible and taking initiative replacing all the tube lights with LEDs, etc., as effective alternatives.
Minimize the use of unsustainable transport	Make available information about bicycle and pedestrian routes, public transport services and car share schemes to staff and students.	The College is connected through bus services; usually, most of them avail bus services.
	Reduce the proportion of travel on the University/Institute business carried out in private transport and eliminate unnecessary and inefficient use of the University/Institute vehicles	College does not have any common bus services to all stakeholders. College has one cycle stand for students as well as staff members.
	Promote car sharing / car pool among the students and faculty members	No, the College does not promote car sharing/car pool among the students and faculty members.
Minimize consumption of water	Repair sources of water leakage, such as dripping taps and showers as quickly as possible.	College should follow regular checking and maintenance of pipelines to control the water wastage through dedicated personnel.
	Install appliances which reduce water consumption	Practised as much as possible.
	Encourage a decrease in water usage among staff; students and conference guests	All the stakeholders of the College are encouraged in judicial use of water.
	Use an efficient and hygienic water storage mechanism is to minimize the loss of water during storage	College is taking some steps to aware about use of hygicnic water, proper storage of water. Advanced Sensor-based system be introduced to minimize the loss of water during storage, as well as in some places for effective saving of electricity.
	Minimize wastage of water and use of electricity during water filtration process, if used, such as RO filtration process and ensure that the equipment's used for such usage, are regularly serviced, and the wastage of water is not below the industry average for such equipment's used in similar capacity	
	Install Water recycling mechanism, such as rain water harvesting system	Rainwater harvesting system is used for gardening and cleaning; College may develop groundwater recharge system.



Control objectives	Control(s)	Audit Observations
Minimize the risk of environmental health	Ensure that all cleaning products used by the University/Institute staff have a minimal detrimental impact on the environment, i.e., are biodegradable and non-toxic, even where this exceeds the Control of Substances Hazardous to Health (COSHII) regulations	Negligible amount of cleaning/washing liquids are used in the College. College may maintain 'Green Budget' for the said purposes.
	Minimize the use of fertilizers and pesticides in the University/Institutional gardens, opting for the use of compost produced on site wherever possible	College uses mostly organic fertilizersfor maintenance of gardens, infected plants as and when required basis.
	Dispose the chemical waste generated from the laboratories in a scientific manner	Disposal of solid wastes are managed. Drainage of liquid wastes from wash rooms, labs and other similar sources be managed properly.
	Reduce the practice of burning plastic and other materials that emit the harmful gas on burning is prevented in the campus.	No such burning.
Maintenance of green campus	Ensure the green environment	College is positive about increasing greenery. Tree plantation programmes are followed in different occasions on year-wise.
	Establish a Garden in the campus	Students should be trained to handle People Biodiversity Register (PBR).
	Encourage the faculties and students to plant trees in the garden	College conducts tree plantation programmes through students and staff members on year-wisc. Choice-plantation and fruit-plantationshe followed on regular basis considering the suitability of the region.
	Reviews periodically the list of trees planted in the garden periodically	Periodical maintenance of gardens/plants be followed through student members.
Ensure that environmental awareness is created	Conduct environmental awareness workshops as a part of the program.	College celebrates World Environment Day, Earth Day, World Animal Welfare Day, etc.
	Create awareness of environmental sustainability and takes actions to ensure environmental sustainability.	College conducts environmental awareness programmes to ensure environmental sustainability.
	Reduce the rate at which the University/Institute contributes to the depletion and degradation of natural resources	responsible in depletion and/or degradation

Control objectives x	Control(s)	Audit Observations
	Promote environmental awareness as a part of course work in various curricular areas, independent research projects, and community service	Compulsory ENVS paper as per University guidelines for all the students of all streams are mandatory to have an awareness on Environmental,
Ensure that the buildings conform to green standards	Review architecture of existing buildings and reviews ways, in consultation with experts, to reduce usage of energy for such buildings, offering greatest efficiency for energy and water usage, and reducing carbon emission	construction.
Ensure that the Environmental Policy Is enacted, enforced and reviewed	Environmental Committee that will hold	College should reframe College Environmental Committee properly.
	Ensure that on the Nature Club/Environmental Committee there will be appropriate representatives of the relevant university departments and authorities such as catering, gardening, maintenance, cleaning and finance	College may constitute one Eco Club for hetter functioning.
Ensure that the Environmental Policy is enacted, enforced and reviewed	Committee there will be the Green Officer from an external agency who is engaged in the profession of providing guidance on environmental impact	College is required to reframe the Committee, one Green Officer may be included in this Committee for maintaining hudget.
	Ensure that the Environmental Committee will review the Environmental Policy on an annual basis, and will monitor progress and set measurable targets wherever possible	College campus is declared as 'Plastic Free Zone'.
	Ensure that the Environmental Policy is enforced regardless of whether its requirements exceed the mandate of the law	Beautification and cleanliness be maintained involving students; the Green Policy of the College he framed.
	Require that every staff and student member recognizes their responsibility to ensure that the commitments in the Environmental Policy are properly put into practice	Members of the team constituted by the College authority are actively engaged in maintaining green practices.
	Ensure that an audit is conducted annually and action is taken on the basis of audit report, recommendation and findings	First 'Green Audit' is conducted on 14 th of May 2024 based on the report of year 2022-'23.



VI. Recommendations

Considering the audit, following recommendations were made to the management,

Criteria	Recommendations	
Publication of Audit Report	 Formation of the proper "College Environmental Committee" Resolutions of the "College Environmental Committee" along with audit report be published in the College website. 	
Maximize the propertion of waste that is recycled & minimize the quantity of non- recyclable refuse	 Composting system be developed for degradable/bio-wastes in a proper way. College may go for parmarship with <i>Local Panchayat</i> in monitoring the disposal of solid wastes through sharing some outreach programs also. Composting/Vermicomposting should be prepared considering its vegetable wastes, food wastes from canteens and campus litters. 	
Reduce energy consumption, especially of energy derived from fossil fuels,	 Use energy efficient lighting/solar light fully in and around the campus; Ecological street may be developed in and around the campus. The control switch, MCP for monitoring of energy and sensor-based system for water consumption building wise/department wise be maintained through the involvement of student members. Ecological street may be developed in and around the campus; Pedestrian access be marked. 	
Maintenance of Campus and biodiversity	 PUC (Pollution under control) certificate for all the vehicles entering the campus to be made mandatory and to be checked by security. Students be aware importance of Medicinal Gardens and PBR for different locations. Proper training, workshop on maintenance of PBR for local villages and different locations as an outreach program be initiated. Choice-plantation, fruit-plantation, artificial nesting, <i>etc.</i>, be followed to maintain attract birds and other animals within the campus. Proposal of Butterfly Garden may be initiated. 	
Proper cleaning of water storage Tanks	 Proper cleaning of the water tanks for fruitful uses be followed; management of dead leaves, litters of trees inside the campus he taken care off on regular basis. Sensor-based system be maintained for checking of wastage of tank water. 	
Project-based learning on Environment related subjects	 Creation of opportunity to start with technical, skill-oriented and hands-on-training programmes for environmental monitoring. Recognition/Awards on green & clean campus from authorised persons/organisations. 	

VII. Objectives and Scope

The purpose of this audit was to ensure that the Green Management Practices are followed and implemented in the campus, across all departments, administrative bodies and students.

VIII. Methodology

The methodology includes - preparation and filling up of questionnaire, screening of the report, physical interaction with the members in presence of Principal and the Members of the College Environmental Committee as well as Members of IQAC, record checking and review of the submitted documentations, interviewing key persons and data analysis, measurements and recommendations. It works on the several aspects of 'Green Audit' including Water Conservation, Tree Plantation, Waste Management, Paperless Work, Alternative Energy and Mapping of Biodiversity.



a. In order to meet these objectives, this audit was based on report submitted by the College authority and reviewing of relevant documents as far as possible and interviews with authority, Coordinator and staff members physically.

b. Review of the Documentations

c. For the purpose of this audit the Green Policy of the institute was reviewed. Other relevant standards, Green audit framework etc., was also considered.

Interviews

Interviews were conducted with the Principal, Green Audit Committee and IQAC Coordinator and also members of the Committee.

Physical Inspection

Physical inspection was made on 14th of May, 2024 and this audit report was prepared based on the physical verification and validation and interaction with the members of the College.

IX. Declaration

I agree with all the recommendation and observations mentioned in this report.

Date: 14/05/2024 Place: Panchakot Mahavidyalaya Sarbari, Neturia, Purulia

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Dr Subrata Kr Dey Professor in Chemistry & Head-in-Charge of Environmental Sc. Sidho-Kanho-Birsha University Purulia

> Subrata K. Dey ofessor & Herertment of Chemistry anho-Birsha University irulia-723104- W.6.

Dr Apurba Ratan Ghosh Professor & Head Deptt. of Environmental Science The University of Burdwan Burdwan

Professor & Head Deptt. Enviornmental Sc. The University of Burdwan Burdwan, W.B.

14.05.2029 Tapan Kumar Hazra

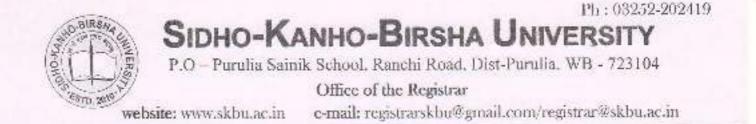
Inspector of Colleges

Sidho-Kanho-Birsha University

Signed by College Principal with Scal

Purulia





Green Audit – Panchakot Mahavidyalaya, Sarbari, Neturia, Purulia

CERTIFICATE

This is to certify that the Energy Management Practices and Green Audit Report of Panchakot Mahavidyalaya, Sarbari, Neturia, Purulia is based on the original data collected during the period of study. This has been independently assessed and is applicable to provide quality ambience in pursuing Higher Education, Training and Mental Support to the students for their enriched future and career. Further, it is certified that the baseline data on energy management and green/environmental monitoring was prepared by internal Green Audit Team of Panchakot Mahavidyalaya, Sarbari, Neturia, Purulia and submitted to us. The content of the baseline data of the study has been personally verified by the Green Audit Team constituted by Sidho-Kanho-Birsha University, Purulia including one external expert member from other university, for validity and reliability. The data used in the study are original in nature and have not been presented or published elsewhere. Data & Photographs used in the report are either taken by the Audit Team or are provided by the Internal Audit Team.

Certificate Memo No.: R/CERT/694 /SKBU/24

Dt.: 16.05.2024

Date of Issue of the Certificate: 16th May, 2024

The certificate is valid for one year from the date of issue.

N.Bandyopoula

Dr. Nachiketa Bandyopadhyay, Registrar Sidho-Kanho-Birsha University,Purulia

> Registrar Sidho-Kanho-Birsha University Purulia-723104

Date: 14/05/2024

To The Principal PanchakotMahavidyalaya Sarbari, Neturia Purulia West Bengal

Website: www.panchakotmv.ac.in E-mail: panchakotmahavidyalaya@gmail.com; sapta.eco@gmail.com

Subject: Environmental Audit Report Submission from Experts

Dear Sir

After verification of all the aspects in the College and necessary assessment of the report on "Environmental/Green Audit" mentioning the "Energy Monitoring & Management System" submitted by your College for the period of 2022-'23, here, we are submitting the Report of "Environmental/Green Audit" of your College of the period of 2022-'23 for your kind perusal in the attached sheet. We request you to please acknowledge and oblige.

Yours sincerely,

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DrSubrata Kr Dey Professor in Chemistry & Head-in-Charge of Environmental Sc. Sidho-Kanho-Birsha University Purulia

Dr. Subrata K. Dey Professor & Head Department of Chemistry Sidho-Kanho-Birsha University Purulia-723104- W.B.

DrApurbaRatan Ghosh Professor & Head Deptt. of Environmental Science The University of Burdwan Burdwan

Professor & Head Deptt. Enviornmental Sc. The University of Burdwan Burdwan, W.B.

14.05.0019

Tapan KumarHazra Inspector of Colleges Sidho-Kanho-Birsha University Purulia

AUDIT REPORT ON ENVIRONMENTAL AUDIT/ GREEN AUDIT

CERTIFICATE

This is to certify that the Environmental Audit/Green Audit Report and Energy Monitoring & Management System followed at PanchakotMahavidyalaya, Sarbari, Neturia, Purulia(AISHE Code: C-44628) is based on the original data collected during the period of 2022-'23. This has been assessed and is applicable to providequality ambience for continued Higher Education, Training and Mental health to the students for their smart future and career. Further, it is certified that the baseline data was prepared by internal Green Audit Committee team members ofPanchakotMahavidvalaya, Sarbariand submitted to us. The content of the baseline data of the study and Energy Monitoring & Management System has been personally verified by the Expert Team "Green Audit Team" constituted by the Sidho-Kanho-Birsha University, Puruliafor validity and reliability. The data used in the study are original in nature and have not been presented or published elsewhere. Data & Photographs used in the report are taken by the College 'Green Audit Committee' team members during preparing their Report of the concerned year 2022 - '23.

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DrSubrata Kr Dey Professor in Chemistry & Head-in-Charge of Environmental Sc. Sidho-Kanho-Birsha University Purulia

Dr. Subrata K. Dey Professor School Department of Chemistry Sidho-Kanho-Birsha University Purutia-723104- W.B.

DrApurbaRatan Glosh Professor & Head Deptt. of Environmental Science The University of Burdwan Burdwan

Professor & Head Deptt. Enviornmental Sc. The University of Burdwan Burdwan, W.B.

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Tapan KumarHazra Inspector of Colleges Sidho-Kanho-Birsha University Purulia