Yearly Status Report - 2019-2020

Part A	
Data of the Institution	
1. Name of the Institution	**HOMI BHABHA NATIONAL INSTITUTE**
Name of the head of the Institution	**P. R. Vasudeva Rao**
Designation	**Vice Chancellor**
Does the Institution function from own campus	**Yes**
Phone no/Alternate Phone no.	**022-25597638**
Mobile no.	**9566535738**
Registered Email	**vcoff@hbni.ac.in**
Alternate Email	**registrar@hbni.ac.in**
Address	**HBNI, 2nd Floor, Training School Complex, Anushaktinagar, Mumbai**
City/Town	**Mumbai**
State/UT	**Maharashtra**
Pincode	**400094**

2. Institutional Status

University	**Deemed**
Type of Institution	**Co-education**
Location	**Urban**
Financial Status	**central**
Name of the IQAC co-ordinator/Director	**Prof. A.K. Dureja**
Phone no/Alternate Phone no.	**02225597629**
Mobile no.	**9969102829**
Registered Email	**registrar@hbni.ac.in**
Alternate Email	**dureja@hbni.ac.in**

3. Website Address

Web-link of the AQAR: (Previous Academic Year)	http://www.hbni.ac.in/main/dsp_doc.html?nm=aqar/stsrpt18_19.pdf

4. Whether Academic Calendar prepared during the year	**Yes**
if yes,whether it is uploaded in the institutional website: Weblink :	http://www.hbni.ac.in/students/dsp_file.html?nm=students/acdm_clndr.pdf

5. Accrediation Details

Cycle	Grade	CGPA	Year of Accrediation	Validity	
				Period From	Period To
1	**A**	**3.53**	**2015**	**11-May-2015**	**10-May-2020**

6. Date of Establishment of IQAC	**27-Jun-2014**

7. Internal Quality Assurance System

Quality initiatives by IQAC during the year for promoting quality culture		
Item /Title of the quality initiative by IQAC	Date & Duration	Number of participants/ beneficiaries
Theme meeting on Quality	**13-Mar-2020**	**15**

Initiatives & Research Inovations, (as part of 6th IQAC meet)	1	
Theme meeting on Curriculum attainment, programme outcomes/ Course Outcomes (as part of 5th IQAC meet)	05-Dec-2019 1	14
Theme Meeting on HBNI Policy, Student Feedback assessment (as part of 4th IQAC meet)	04-Sep-2019 1	10
Faculty Induction Programme	20-Dec-2019 1	124
Foundation Day Special Lecture	03-Jun-2019 1	400
Short Course in Severe Accidentis Phenamenology in collaboration with INSTN	09-Sep-2019 6	43
Certificate Course on Nuclear Law	19-Aug-2019 40	44
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8. Provide the list of Special Status conferred by Central/ State Government-UGC/CSIR/DST/DBT/ICMR/TEQIP/World Bank/CPE of UGC etc.

Institution/Department/Faculty	Scheme	Funding Agency	Year of award with duration	Amount
No Data Entered/Not Applicable!!!				
No Files Uploaded !!!				

9. Whether composition of IQAC as per latest NAAC guidelines:	**Yes**
Upload latest notification of formation of IQAC	[View File](#)
10. Number of IQAC meetings held during the year :	**4**
The minutes of IQAC meeting and compliances to the decisions have been uploaded on the institutional website	**Yes**
Upload the minutes of meeting and action taken report	[View File](#)
11. Whether IQAC received funding from any of the funding agency to support its activities during the year?	**Yes**

If yes, mention the amount	**200000**
Year	**2019**

12. Significant contributions made by IQAC during the current year(maximum five bullets)

(i) Unique value added courses were offered (a) Certificate course in Nuclear Law (b) Severe Accidents Phenomenology in collaboration with INSTN, France

(ii) Commemoration of International year of the Periodic Table 2019

(iii) Newsletter of HBNI illustrating scientific events, achievements, popular articles in nuclear science & technology

(iv) Policy documents of HBNI academic and Research activites - Policy on Code of Ethics, Core Values of HBNI, HBNI's Research Promotion Policy, HBNI's Distinctinctive Characteristics

(v) Conducting Student Feeback analysis, discussion of feedback in various statutory bodies CoM, Academic Council, Standing committee of Deans and communication of the action taken on the academic and infrastructure improvement

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13. Plan of action chalked out by the IQAC in the beginning of the academic year towards Quality Enhancement and outcome achieved by the end of the academic year

Plan of Action	Achivements/Outcomes
Conduct a unique value added course for the midcareer scientists, policy makers and scientific administrators	**Conducted the following unique value added courses in Nuclear Science and Technology for DAE Scientists (a) Certificate course in Nuclear law (b) Severe Accidentis Phenamenology in collaboration with INSTN, France**
Instituting/ Celebrating HBNI's Foundation Day & Invited Lecture series	**HBNIs Foundation Day celebrated on 3rd June 2019, Prof. Anil Kakodkar, exChairman, AEC former Secretary DAE Prof. Anil Saharasbude, Chairman AICTE, graced the occation with a lecture on Reforms in Higher Education to the larger gathering on the occassion.**
Policy documents for key HBNI academic and research activities with the aim to enhance relevance	**Well laid documents are in place viz., Policy on Code of Ethics, Core Values of HBNI, HBNIs Research Promotion Policy, HBNIs Distinctive Characteristics**
Conducting Student feedback analysis	**A structured feedback analysis was undertaken during the year, inputs were solicited and action taken on the**

	academic and related activities, the outcomes were deliberated in various meetings of statutory bodies for further action in development and improvement in the key attributes.
	[View File](#)

14. Whether AQAR was placed before statutory body ?	**Yes**

Name of Statutory Body	Meeting Date
Academic Council	**22-Jul-2020**

15. Whether NAAC/or any other accredited body(s) visited IQAC or interacted with it to assess the functioning ?	**No**

16. Whether institutional data submitted to AISHE:	**Yes**

Year of Submission	**2020**

Date of Submission	**23-Jan-2020**

17. Does the Institution have Management Information System ?	**Yes**

If yes, give a brief descripiton and a list of modules currently operational (maximum 500 words)	**A robust, Institute Management System (IMS), a platform for collation student and faculty information has been functional. Student upload their requisite information pertaining to academic and related details, other related details including alumni information. Faculty also upload thier academic and related achievements along with affiliation with national and international scientific bodies. The IMS helps in managing credentials of students in regard to academic progress and maintain faculty members' information. This has been designed so that all the academic related matters are processed on a fast track mode. The enrolment process is initiated online, which goes through the competent authorities of the Institute for the final decision by the ViceChancellor. Upon approval by the ViceChancellor, enrolment number is generated automatically. All certificates needed for students' enrolment and enrolment form are uploaded in the system.**

Part B

CRITERION I – CURRICULAR ASPECTS

1.1 – Curriculum Design and Development

1.1.1 – Programmes for which syllabus revision was carried out during the Academic year

Name of Programme	Programme Code	Programme Specialization	Date of Revision
PG Diploma	LIFE00	Biosciences (BARC)	08/01/2019
Mtech	ENGG01	Engineering Sciences (RRCAT)	08/12/2019
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1.1.2 – Programmes/ courses focussed on employability/ entrepreneurship/ skill development during the Academic year

Programme with Code	Programme Specialization	Date of Introduction	Course with Code	Date of Introduction
Mtech	Engineering Sciences	05/08/2019	SS01	05/08/2019
PG Diploma	Physical Sciences, Chemical Sciences, Life Sciences	05/08/2019	SS01	05/08/2019
PG Diploma	Medical Radio Isotpe Techniques (TMC)	19/08/2019	HLTH07	19/08/2019
PG Diploma	Fusion Imaging Technology (TMC)	19/08/2019	HLTH16	19/08/2019
PG Diploma	Radiological Physics (BARC)	12/08/2019	HLTH11	12/08/2019
MCh	Super Specialist in Oncology (TMC)	01/08/2019	HLTH10B	01/08/2019
MD	Super Specialty in Oncology (TMC)	01/08/2019	HLTH09	01/08/2019
MSc Nursing	Nursing Sciences in Oncology (TMC)	05/08/2019	HLTH15	05/08/2019

MSc	Clinical Research in Oncology (TMC)	05/08/2019	HLTH17	05/08/2019
DM	Super Specialty in Oncology (TMC)	01/08/2019	HLTH10A	01/08/2019
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1.2 – Academic Flexibility

1.2.1 – New programmes/courses introduced during the Academic year

Programme/Course	Programme Specialization	Dates of Introduction
MSc	Nuclear Medicine & Molecular Imaging Technology [TMC]	01/08/2019
PhD or DPhil	Physical Sciences (BARC)	07/10/2019
PhD or DPhil	Chemical Sciences (BARC)	01/10/2019
PhD or DPhil	Life Sciences (BARC)	01/10/2019
PhD or DPhil	Engineering Sciences - Electrical & Electronics (IGCAR)	01/08/2019
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1.2.2 – Programmes in which Choice Based Credit System (CBCS)/Elective Course System implemented at the University level during the Academic year.

Name of programmes adopting CBCS	Programme Specialization	Date of implementation of CBCS/Elective Course System
PhD or DPhil	Engineering Sciences	07/08/2019
PhD or DPhil	Physical Sciences	07/08/2019
PhD or DPhil	Chemical Sciences	07/08/2019
PhD or DPhil	Life Sciences	07/08/2019
PhD or DPhil	Mathematical Sciences	07/08/2019
PhD or DPhil	Applied Systems Analysis	07/08/2019
PhD or DPhil	Integrated Dual Degree Engineering Sciences	12/08/2019
PhD or DPhil	Integrated Dual Degree Physical Sciences	12/08/2019
PhD or DPhil	Integrated Dual Degree Mathematical Sciences	12/08/2019
MSc	Physical Sciences	12/08/2019
Integrated(PG)	Five Year MSc Physical Sciences	12/08/2019
Integrated(PG)	Five Year MSc Chemical Sciences	12/08/2019
Integrated(PG)	Five Year MSc Mathematical Sciences	12/08/2019

Integrated(PG)	Five Year MSc Biological Sciences	12/08/2019
PG Diploma	Engineering Sciences	05/08/2019
PG Diploma	Physical Sciences	05/08/2019
PG Diploma	Chemical Sciences	05/08/2019
PG Diploma	Life Sciences	05/08/2019
Mtech	Engineering Sciences	05/08/2019
MPhil	Physical Sciences	07/08/2019
MPhil	Chemical Sciences	07/08/2019

1.3 – Curriculum Enrichment

1.3.1 – Value-added courses imparting transferable and life skills offered during the year

Value Added Courses	Date of Introduction	Number of Students Enrolled
Soft Skill Courses - Executive Excellence Programme	05/08/2019	88
Executive Excellence for Engineers, Scientists of BARC TS	05/08/2019	88
Technical Communication I (NISER Integrated PG Students)	12/08/2019	174
Technical Communication II (NISER Integrated PG Students)	06/08/2019	174
Science Communication for Medical doctors and scientists	06/08/2019	126
Soft Skill Course (IGCAR)	01/05/2019	23
Fellowship in Thoracic Oncology - TMC	01/05/2019	1
Fellowship in Pulmonary Oncology - TMC	01/08/2019	1
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1.3.2 – Field Projects / Internships under taken during the year

Project/Programme Title	Programme Specialization	No. of students enrolled for Field Projects / Internships
Mtech	Engineering Sciences	272
MD	Medical & Health Sciences	81
PG Diploma	Engineering Sciences, Physical Sciences, Chemical Sciences, Life Sciences, Radiological Physics, FIT,	67
MSc Nursing	Oncology Nursing	10

MSc	Clinical Research Oncology	10

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1.4 – Feedback System

1.4.1 – Whether structured feedback received from all the stakeholders.

Students	Yes
Teachers	Yes
Employers	No
Alumni	Yes
Parents	Yes

1.4.2 – How the feedback obtained is being analyzed and utilized for overall development of the institution? (maximum 500 words)

Feedback Obtained

HBNI is a deemed to be university with a unique academic proposition offered through 10 CIs and an Off Campus Centre. As per the mandate of DAE and HBNI, around 40 percent of the students enrolled for the programmes of Institute are employees of Department of Atomic Energy (or) Trainee Scientific Officers of RD Units of DAE. CIs/OCC offering various academic programmes collect feedback responses from the students concerning each course work and lectures. These are reviewed by the respective CIs/ OCC and responses are collated, discussed in various committees and forum for improvement of academic programmes. This feedback helps to understand the effectiveness of course syllabus, and teaching quality and blind spots of the lecturers. The lecturers are also advised to obtain informal feedback regularly so that they can gauge the pulse of their classroom and make necessary changes in teaching methodology to suit the class. HBNI also obtains feedback from its various stakeholders, on a regular basis, to ensure that the programs, processes, infrastructure, facilities and environment in its Central Office as well as the CIs/OCC are conducive to healthy growth and also ensure that HBNI can meet objectives with which it was established. The feedback from stakeholders are analysed and discussed on the various academic bodies of HBNI to take appropriate actions wherever it is required for achieving the objectives of HBNI.

CRITERION II – TEACHING- LEARNING AND EVALUATION

2.1 – Student Enrolment and Profile

2.1.1 – Demand Ratio during the year

Name of the Programme	Programme Specialization	Number of seats available	Number of Application received	Students Enrolled
MSc	Nuclear Medicine & Molecular Imaging Technology	5	147	5
MSc	Clinical Research	10	167	10
MSc Nursing	Nursing Sciences	10	12	6
MSc	Physical Sciences	20	75	6

PhD or DPhil	Physical Sciences, Chemical Sciences, Life Sciences, Mathematical Sciences	29	376	11
PG Diploma	Chemical Sciences	6	6584	3
PG Diploma	Physical Sciences	8	8830	7
Mtech	Engineering Sciences	118	117867	88
Integrated(PG)	Physical Sciences, Chemical Sciences, Biological Sciences, Mathematical Sciences	202	1200	120

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2.2 – Catering to Student Diversity

2.2.1 – Student - Full time teacher ratio (current year data)

Year	Number of students enrolled in the institution (UG)	Number of students enrolled in the institution (PG)	Number of fulltime teachers available in the institution teaching only UG courses	Number of fulltime teachers available in the institution teaching only PG courses	Number of teachers teaching both UG and PG courses
2019	Nill	3202	Nill	1077	1077

2.3 – Teaching - Learning Process

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, e-Resources)	ICT Tools and resources available	Number of ICT enabled Classrooms	Numberof smart classrooms	E-resources and techniques used
1077	1077	4279	129	Nill	100

View File of ICT Tools and resources

View File of E-resources and techniques used

2.3.2 – Students mentoring system available in the institution? Give details. (maximum 500 words)

Students enrolled for PhD programmes are mentored by Doctoral Committee, and for MTech programmes by a MTech Monitoring Committee, for MPhil programmes by a MPhil Thesis Committee PG Programmes viz., MSc and MSc 5 Year Integrated programmes by a PG Programme Committee. There is a continuous process of students mentoring, through academic courses, project work and mini projects. The students are always welcome and encouraged to interact outside the classes during the course work. After the course work, they are encouraged to get into the research aspects, and interact outside the classroom. Towards the end of research programme, the supervisor and other faculty members help the student to look for the places for career development and institute forwards supporting letters, whenever required. They are encouraged to undertake 6

month project work in such sectors that are relevant for career development. HBNI has a well defined policy for mentoring newly admitted students and enrolled graduate students. Students from various geographies and socioeconomic backgrounds, urban rural mix of students join the PG and PhD programmes following due processes as stipulated in the CIs/ OCC. All the CIs/ OCC conduct student induction programme with the objective to orient them in behavioral, emotional, cultural aspects. They are also well informed about the academic and related activities in beginning of the academic year. For PG programmes there is MTech Project Monitoring Committee, which mentors students in the project work and the academic activities. Students have access to their guides and mentors at all times. Similarly, for the PhD programme the student specific Doctoral Committee provides the complete mentoring and guidance to the research students. The student specific guide also mentors and guides the students in furthering research for pursuing postdoctoral fellow in the national/ international institutions. External members in DC is also proposed taking into account the specialities of thesis and research needs, they also mentor the student as per needs of sectoral growth and employment. Provision of Institute information regulations: HBNI at the central level prepares Student information Brochure, which highlights about the university level activities and student related matters in terms of academic activities, academic regulations, ordinances and other academic requirements. In each of the CIs/ OCC, Dean Student Affairs is the key person to inform and guide students in case of concerns like regulations, student matters of course requirements, guides, external interactions. Each of the CIs/ OCC have a Student Grievance Committee for students to have access to key relevant information and raise issues if any and resolve the matter at the CI level. In case they are not satisfied, they can address directly to the Central Office and Vice Chancellor is the final authority.

Number of students enrolled in the institution	Number of fulltime teachers	Mentor : Mentee Ratio
3202	1077	1:3

2.4 – Teacher Profile and Quality

2.4.1 – Number of full time teachers appointed during the year

No. of sanctioned positions	No. of filled positions	Vacant positions	Positions filled during the current year	No. of faculty with Ph.D
1332	1077	255	26	951

2.4.2 – Honours and recognition received by teachers (received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the year)

Year of Award	Name of full time teachers receiving awards from state level, national level, international level	Designation	Name of the award, fellowship, received from Government or recognized bodies
2019	Prof. Sanjib Kumar Agarwalla, IoP	Associate Professor	B.M. Birla Science Prize in Physics
2019	Manoj Yadav, HRI	Professor	Editor, Proceedings – Mathematical Sciences Published by Indian Academy of Sciences (Math. Sci)
2019	Dr.Kunal B.Gala, TMC	Associate Professor	European board of Interventional Radiology(CIRSE)
2020	Dr Santosh Menon, TMC	Professor	Awarded/Conferred the JAIPUR ORATION by the Urological Society of India, recognized society by Govt of India

2019	Prof. Bedangadas Mohanty, NISER	Professor	Scientific Associate Position in the Experimental Physics Division at CERN Geneva
2020	Dr. A. K. Tyagi, BARC	Professor	Acharya PC Ray Memorial Award from Indian Science Congress Association (Conferred by Shri Venkaiha Naidu)
2019	Dr. Celin Acharya, BARC	Associate Professor	DAE (Department of Atomic Energy, Govt. Of India)Scientific and Technical Excellence Award
2019	Dr. Tumpa Bhattacharjee, VECC	Assistant Professor	DAE Technical and Scientific Excellence award Cash award of Rs. 1 lakh
2019	Prof. Chandrima Das, SINP	Assistant Professor	S. Ramachandran National Bioscience Award for Career Development - 2019 by Dept. of Biotechnology, Govt. of India
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2.5 – Evaluation Process and Reforms

2.5.1 – Number of days from the date of semester-end/ year- end examination till the declaration of results during the year

Programme Name	Programme Code	Semester/ year	Last date of the last semester-end/ year- end examination	Date of declaration of results of semester- end/ year- end examination
PG Diploma	HLTH11	2nd Semester	31/07/2020	07/11/2020
PG Diploma	HLTH11	Ist Semester	03/01/2020	17/03/2020
PG Diploma	CHEM00	2nd Semester	31/01/2020	17/02/2020
PG Diploma	CHEM00	Ist Semester	22/11/2019	09/12/2019
[View File](#)			

2.5.2 – Average percentage of Student complaints/grievances about evaluation against total number appeared in the examinations during the year

Number of complaints or grievances about evaluation	Total number of students appeared in the examination	Percentage
10	3202	0.06

2.6 – Student Performance and Learning Outcomes

2.6.1 – Program outcomes, program specific outcomes and course outcomes for all programs offered by the institution are stated and displayed in website of the institution (to provide the weblink)

http://www.hbni.ac.in/main/dsp_doc.html?nm=posop.pdf

2.6.2 – Pass percentage of students

Programme Code	Programme Name	Programme Specialization	Number of students appeared in the final year examination	Number of students passed in final year examination	Pass Percentage
01	PhD or DPhil	All prgm as in list	564	539	95.6

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2.7 – Student Satisfaction Survey

2.7.1 – Student Satisfaction Survey (SSS) on overall institutional performance (Institution may design the questionnaire) (results and details be provided as weblink)

http://www.hbni.ac.in/naac/sfb/fedbck1920.pdf

CRITERION III – RESEARCH, INNOVATIONS AND EXTENSION

3.1 – Promotion of Research and Facilities

3.1.1 – Teachers awarded National/International fellowship for advanced studies/ research during the year

Type	Name of the teacher awarded the fellowship	Name of the award	Date of award	Awarding agency
International	Sumathi Rao, HRI	ICTP Senior Associate	01/01/2020	ICTP, Italy
National	Dr.Kunal B.Gala, TMC	Observership from ISVIR-SIR	01/04/2019	ISVIR
International	DR. ANISHA NAVKUDKAR, TMC	ISBT YOUNG PROFESSIONAL AWARD	17/11/2019	INTERNATIONAL SOCIETY OF BLOOD TRANSFUSION (ISBT)
International	Dr. Kinsuk Dasgupta, BARC	Fulbright-Nehru Academic and Professional Excellence Fellowship	10/09/2019	USIEF

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3.1.2 – Number of JRFs, SRFs, Post Doctoral Fellows, Research Associates and other fellows in the Institution enrolled during the year

Name of Research fellowship	Duration of the fellowship	Funding Agency
DDFS/ DGFS (PhD fellowships)	1825	DAE
Project Fellowship (PhD - JRF, SRF)	1825	DAE
Research Associate(s)	730	DAE

UGC-CSIR (PhD-JRF, SRF)	1825	UGC
DBT (PhD-JRF, SRF)	1825	DBT
RA (DBT)	730	DBT
INSA Fellowship	730	INSA
UGC-DAE CSIR	1825	DAE
NPDF	730	DAE
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3.2 – Resource Mobilization for Research

3.2.1 – Research funds sanctioned and received from various agencies, industry and other organisations

Nature of the Project	Duration	Name of the funding agency	Total grant sanctioned	Amount received during the year
Interdisciplinary Projects	300	Various CIs OCC	72500	62490
Industry sponsored Projects	400	Infosys, ITER	230	127.77
Minor Projects	1200	Other agencies	30708	103654
Major Projects	1240	DAE, DST-DBT	145261	36315
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3.3 – Innovation Ecosystem

3.3.1 – Workshops/Seminars Conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the year

Title of workshop/seminar	Name of the Dept.	Date
Seminar in Indus Synchrotrons Industry Linkages, SISIL-2020	RRCAT: Department of Physical Sciences (organized by faculty and students working at Indus Synchrotrons.)	25/01/2020
Under A Sharp Tank show for ACTREC students by Guest alumni Journey of a Thousand Miles begins with a Small Step: Dr Narendra Chirmule, CEO, Director and Co-founder, SymphonyTech Biologics, Pune, Banglore, Philadelphia, USA	TMC: ACTREC Alumni Association (Medical Health Sciences and Life Sciences)	09/03/2020
Under A Sharp Tank show for ACTREC students by Guest alumni Viral vectors: OLAs and Ubers of Gene Therapy: Dr Hemant Dhamne, Head Vector and CAR-T Cell Processing Immuneel	TMC: ACTREC Alumni Association (Life Sciences Medical and Health Sciences)	09/03/2020

Therapeutics Pvt Ltd, Banglore				

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3.3.2 – Awards for Innovation won by Institution/Teachers/Research scholars/Students during the year

Title of the innovation	Name of Awardee	Awarding Agency	Date of award	Category
Turbulence, Flows and Magnetic Field Generation in Plasmas using a Magnetohydrodynamic Model	Dr. Rupak Mukherjee (Guide: Dr. Rajaraman Ganesh), IPR	Princeton Plasma Physics Laboratory (PPPL)	03/06/2019	International

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3.3.3 – No. of Incubation centre created, start-ups incubated on campus during the year

Incubation Center	Name	Sponsored By	Name of the Start-up	Nature of Start-up	Date of Commencement
na	na	na	na	na	01/05/2020

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3.4 – Research Publications and Awards

3.4.1 – Ph. Ds awarded during the year

Name of the Department	Number of PhD's Awarded
Board of Studies Physical Sciences	126
Board of Studies Chemical Sciences	42
Board of Studies Mathematical Sciences	16
Board of Studies Life Sciences	21
Board of Studies Medical Health Sciences	6
Board of Studies Engineering Sciences	35
Board of Studies Applied Systems Analysis	2

3.4.2 – Research Publications in the Journals notified on UGC website during the year

Type	Department	Number of Publication	Average Impact Factor (if any)
International	Physical Sciences	1213	4.58
International	Chemical Sciences	470	3.82
International	Engineering Sciences	182	3.80
International	Life Sciences Biological Sciences	192	2.82
International	Medical Health Sciences	143	2.98
International	Mathematical Sciences	63	2.84

3.4.3 – Books and Chapters in edited Volumes / Books published, and papers in National/International Conference Proceedings per Teacher during the year

Department	Number of Publication
Physical Sciences	177
Life Sciences	98
Engineering Sciences	80
Chemical Sciences	113

3.4.4 – Patents published/awarded/applied during the year

Patent Details	Patent status	Patent Number	Date of Award
BARC: A process for the removal of 99Tc from liquid intermediate level waste of spent fuel reprocessing (2 patents)	Published	10553324, 34174	29/01/2020
BARC: Method for Bio-beads Development for Normal and Saline Wastewater Treatment	Filed	201921015793	16/09/2019
BARC: Single Step Process for Continuous Production of High Purity Carbon Nanotube Wool having Tunable Semiconducting or Metallic Characteristics	Filed	201921029932	06/12/2019
BARC: Process for Uranium removal from near neutral aqueous solution by freshly prepared fine ferrichydride generated during ultrasonic assisted corrosion of mild steel wool	Filed	16/733388	23/12/2019
IGCAR: 1. Developing Protocol for Depositing Adhesive, Durable and Protective Layers of Homogenous Y2O3	Filed	1000000X	14/11/2019

coating on the Interior Surface of Quartz Tube by Solution Technique			
IPR: Deep CXR - Artificial Intelligenc software for Automated screening of chest X-Rays for Chest Ailments	Filed	20192106615	27/12/2019
BARC: A Tri-vane Spiral Vaccum Booster Device for Pumping High Volumetric Fluid at Low Pressure	Published	312335	06/05/2020
BARC: A hydraulic micrometer system for remote measurement of inside diameter of pipes and tubes and a method of such measurement	Published	327440	16/12/2019
BARC: A storage stable microbial decontaminated Litchi (Litchi Chinensis) with extended shelf life retaining pericarp colour and a process thereof	Published	333456	28/02/2020
BARC: A System, a Device and a Method for Passive Decay Heat Transport (3 patents)	Published	3405958 106077	23/01/2020
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 3.4.5 – Bibliometrics of the publications during the last academic year based on average citation index in Scopus/ Web of Science or PubMed/ Indian Citation Index

Title of the Paper	Name of Author	Title of journal	Year of publication	Citation Index	Institutional affiliation as mentioned in the publication	Number of citations excluding self citation
As given in attached file	Faculty of HBNI	Journals of Web of Science	2019	3.07	HBNI	6927
[View File](#)						

 3.4.6 – h-Index of the Institutional Publications during the year. (based on Scopus/ Web of science)

Title of the Paper	Name of Author	Title of journal	Year of publication	h-index	Number of citations excluding self citation	Institutional affiliation as mentioned in the publication
As given in attachment	All faculty of HBNI	Journals of Web of Science	2019	145	6927	Homi Bhabha National Institute (HBNI)

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3.4.7 – Faculty participation in Seminars/Conferences and Symposia during the year

Number of Faculty	International	National	State	Local
Resource persons	27	33	3	30
Attended/Seminars/Workshops	122	300	1	344
Presented papers	63	169	19	6

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3.5 – Consultancy

3.5.1 – Revenue generated from Consultancy during the year

Name of the Consultan(s) department	Name of consultancy project	Consulting/Sponsoring Agency	Revenue generated (amount in rupees)
Divisions of BARC IPR CIs OCC	Specialized areas of Nuclear Engineering and Technology	DAE RD Centres Other Organization	1353007

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3.5.2 – Revenue generated from Corporate Training by the institution during the year

Name of the Consultan(s) department	Title of the programme	Agency seeking / training	Revenue generated (amount in rupees)	Number of trainees
BARC Scientists (RPAD Division) Physical Sciences	Capacity building in Radiation	Scientists of various Universities	1360000	35
BARC Scientists (IRAD Division) Chemical Sciences	Radiography Testing Level-II	Scientists of various Academies	1370000	113

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3.6 – Extension Activities

3.6.1 – Number of extension and outreach programmes conducted in collaboration with industry, community and Non- Government Organisations through NSS/NCC/Red cross/Youth Red Cross (YRC) etc., during the year

Title of the activities	Organising unit/agency/	Number of teachers	Number of students

	collaborating agency	participated in such activities	participated in such activities
One day Training Program on Quality Assurance Aspects for Engineers and Supervisors	SQRMG, IGCAR	5	65
One day Training Programme on "Nuclear Radiation in Fuel Cycle"	IGCAR	5	50
Mini Marathon- Bina Paani Sab Shun	RRCAT	15	30
Science Outreach Programme at Vigyan Samagam at Science City Ground, Kolkata (November 4-December 30, 2019)	Vigyan Pratibha Programme, SINP	5	15
Meghnad Saha Smarak Vigyan Mela (January 23-26, 2020)	Paschim Banga Vigyan Mancha, SINP	4	10
Swachha Bharat Abhiyan at Kuruma Village, Dist-Puri on 18.02.2020	Institute of physics Kuruma Village Peoples Club , IOP	2	50
Platelet awareness programmes	1-2 per month, TMC	3	12
Dr. Baldev Raj Memorial Bridge Course on Non-destructive Evaluation and Quality Assurance (BRM-BCNQ)	IGCAR/ISNT	4	34
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3.6.2 – Awards and recognition received for extension activities from Government and other recognized bodies during the year

Name of the activity	Award/Recognition	Awarding Bodies	Number of students Benefited
Healthcare Excellence Award, TMC	The Healthcare Excellence Award for outstanding contribution in Health Education was presented to Dr. Bhubaneswar Borooah Cancer Institute (BBCI), Guwahati by Hon'ble	Govt. of Assam	10

	Health Minister of Assam Dr Himanta Biswa Sarma, Govt. of Assam on February 9, 2019		
The Leadership in Home Care Service Award 2019, TMC	The Leadership in Home Care Service Award 2019 was presented to the Palliative Care Unit of BBCI, Guwahati by Pratishruti Cancer Palliative Trust, Dibrugarh, Assam	Pratishruti Cancer Palliative Trust, Dibrugarh, Assam	12
Implementation of AB-PMJAY Scheme, TMC	BBCI, Guwahati topped the list of 10 hospitals in the State of Assam for implementation of AB-PMJAY Scheme.	State of Assam	20
Implementing the Ayushman Bharat scheme, TMC	HBCH, Varanasi received award of appreciation for commendable performance in implementing the Ayushman Bharat scheme by the Health Ministry of UP in Lucknow on December 2, 2019.	The Health Ministry of UP in Lucknow	10
Library, IGCAR	Digitally Transformed Research Library - 2019	Wiley	30
Implementation of Official language in the Institute, IOP	Winner of Rajbahsha Shiled-2019	Department of Atomic Energy , Town Official Language Implementation Committee (Central), Bhubaneswar , Department of Official Language, Govt. of India	10
Implementation of Official language in the Institute, IOP	2nd Prize	DAE	5
Together We Fight Cancer, TMC	The Merck Foundation Appreciation Award "Together We Fight	The Merck Foundation	25

		Cancer" was conferred to Tata Memorial Centre in October 2019.			

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3.6.3 – Students participating in extension activities with Government Organisations, Non-Government Organisations and programmes such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the year

Name of the scheme	Organising unit/Agency/collaborating agency	Name of the activity	Number of teachers participated in such activites	Number of students participated in such activites
Free Education to slum children	Zariya , IOP	Teaching and learning	6	20
Yamini Classical Nights on 2.11.2019	SPIC-MACAY, odisha Chapter, IOP	Cultural activities	2	50
Annual Safety and Occupational Health Awareness Programme	SINP	Lecture by Prof. Subroto Chakrabarty of W. B. Academy of Pediatrics on "Lessons Learned from Dengue Epidemic in Kolkata 2. demonstration of fire Equipment and Evacuation drill	4	120
Swachhata Diwas	SINP	Swachhata hi Seva (Oct 1 and 2, 2019)	6	25
SINP Social Outreach Programme	SINP	Workshop on Water Conservation (January 21, 2020)	4	180
SINP Social Outreach Programme	SINP	Stanzin Dorjai, an internationally acclaimed film maker delivered a lecture on "The Shepherdess of the Glaciers" (July 3, 2019)	4	100
Swachh Bharat Abhiyan	RRCAT	Clean and Green Campus	3	20
Swatchh Bharat	IGCAR- HBNI	Swatchhta activities	2	21

3.7 – Collaborations

3.7.1 – Number of Collaborative activities for research, faculty exchange, student exchange during the year

Nature of activity	Participant	Source of financial support	Duration
A computational investigation on the reaction paths and spectroscopic properties of crown ethers	Dr. S. K. Musharaf Ali, BARC	BOARD OF RESEARCH IN NUCLEAR SCIENCES (BRNS)	1095
Metabolic engineering of plants for the expression of antioxidant metabolites of Deinococcus radiodurans	Dr. H S Mishra, BARC	DAE-BRNS	1095
5.Synthesis and characterization of platinum nano-catalyst on carbon /graphene for fuel cell , hydrogen sensor applications in the context of cold trap regeneration of sodium cooled fast reactors	Prof. S. Ramaprabhu (PI), Department of Physics, IIT-M, Chennai, IGCAR	-	730
Development of field deployable fiber Bragg grating based sensor for monitoring of hazardous toxic chemicals and gases	Dr. Om Prakash (HBNI-RRCAT) Prof. S. K. Raghuwanshi (IIT (ISM) Dhanbad, India)	BRNS (ref No. 34/14/15/2018-BRNS/34102)	1095
Collaboration on work on 2D materials	Dhanshree Pandey (PhD student, HBNI, RRCAT)	Michigan Technological University, USA	1095
Laser additive manufacturing of pre-forms	A N Jinoop (PhD Student, HBNI, RRCAT)	M P Council of Science Technology	730
Research Activity with Guru Ghasidas Viswavidyalaya	Tapobrata Som, Shivpoojan Patel, IoP	-	365
Resaecrh on Synthetic Quantum Materials by Atomic Layer Engineering and Emergent Phenomena	Debakanta Samal, IoP	Max Plank Institute, Germany	365

Students visit to DESY, Hamburg, Germany for collaborative work	Vinaya Krishna, Nair, Diwakar Vats, IoP	Full financial support for travel and daily allowance by CMS group, DESY, Hamburg	730
Ligand coated soft materials for adsorptive separation of Gd3 and UO22ions	Dr. SK. Musharaf Ali, BARC	BOARD OF RESEARCH IN NUCLEAR SCIENCES (BRNS)	1095
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3.7.2 – Linkages with institutions/industries for internship, on-the- job training, project work, sharing of research facilities etc. during the year

Nature of linkage	Title of the linkage	Name of the partnering institution/ industry /research lab with contact details	Duration From	Duration To	Participant
RRCAT, MoU between IIT-Indore and HBNI	Sharing of facilities and resources to research students (Ph. D.) Academic, IIT Indore	Academic, IIT Indore	01/01/2019	01/01/2020	Prof. Vipul Singh , Dept of Elec. Engg, IIT-Indore and Prof. Mukesh Joshi
BARC, Visiting Professorship	Visiting Professorship	Toyo University, Japan	10/11/2019	23/11/2019	Prof. Hari S Misra
BARC, Project work for Biochemistry student	Exploring nanostructured semiconductor thin film heterostructure for Biosensing applications	HIMALAYAN SCHOOL OF BIOSCIENCES, Swami Rama Nagar, Dehradun	18/01/2020	31/03/2020	Mayank Bahuguna under the guidance of Dr. Betty C.A.
BARC, Project work for M.Pharm student	Highly Sensitive Detection of Anticancer Drug by	Banasthali Vidyapith, Rajasthan	01/06/2019	25/05/2020	Ms. Jyoti Singh under guidance of Dr. Betty C.A.
VECC, Student -Faculty_Research	Student training programme	KIIT University	01/01/2020	30/06/2020	31 students in 2020
TMC, On the job training	Academic Collobaration	LTM Medical College, sion ,	01/01/2020	30/06/2020	DR. TARUN ARUN SAHU, Critical Care

TMC, On the job training	Academic Collobaration	LTM Medical College, sion , mumbai	01/01/2020	30/06/2020	DR. VIKAS ATMARAM SONWANE, Anaesthesiology
TMC, On the job training	Academic Collobaration	Wadia Hospital, mumbai	01/01/2020	30/06/2020	DR. SUDHANSHU HEDAU, Plastic Reco. Surgery
TMC, On the job training	Academic Collobaration	Wadia Hospital, mumbai	01/01/2020	30/06/2020	DR. SWAMINATHAN K, Paediatric
TMC, On the job training	Academic Collobaration	Seth G.S. Medical College, Parel	01/11/2019	30/11/2020	DR. PATEL NIKI DINESHKUMAR, Anaesthesiology

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3.7.3 – MoUs signed with institutions of national, international importance, other universities, industries, corporate houses etc. during the year

Organisation	Date of MoU signed	Purpose/Activities	Number of students/teachers participated under MoUs
Bhabha Atomic Research Centre, Mumbai Security Printing and Minting Corporation of India Ltd., Ministry of Finance, New Delhi	10/02/2020	Development of luminescent Materials and methodology to prevent counterfeiting	5
Security Printing Minting Corporation of India Ltd. (SPMCIL)	10/02/2020	Develop materials and methodologies to prevent counterfeiting of important documents belonging to Government of India	5
IAEA, Vienna	17/07/2020	Atomistic Modeling of Permeation of Hydrogen Isotopes through Fe, W, Cu, and Cr	3
IISER, Pune	01/01/2020	For creating knockout mice of DNA repair genes for assessing anticancer drugs12	12

IIT-Indore	16/01/2020	To enhance the collaborative research	2
MoU- Vikram Sarabhai Space Centre (ISRO)	27/06/2019	Plasma Erosion Characterization of Anode liner Material	Nill
Electronics Corporation of India Ltd. (ECIL)	09/03/2020	Renewal agreement on technology knowhow and licensed production	Nill
Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya, Gwalior, Madhya Pradesh	01/07/2019	Collaboration in the area of development and field testing of agricultural crop varieties and crop production and protection technology.	6

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CRITERION IV – INFRASTRUCTURE AND LEARNING RESOURCES

4.1 – Physical Facilities

4.1.1 – Budget allocation, excluding salary for infrastructure augmentation during the year

Budget allocated for infrastructure augmentation	Budget utilized for infrastructure development
19600	19359.71

4.1.2 – Details of augmentation in infrastructure facilities during the year

Facilities	Existing or Newly Added
Others	Newly Added
Classrooms with Wi-Fi OR LAN	Existing
Video Centre	Existing
Seminar halls with ICT facilities	Existing
Seminar Halls	Existing
Laboratories	Existing
Class rooms	Existing
Campus Area	Existing

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4.2 – Library as a Learning Resource

4.2.1 – Library is automated {Integrated Library Management System (ILMS)}

Name of the ILMS software	Nature of automation (fully or patially)	Version	Year of automation
LIBSYS [SINP]	Fully	7.0	2000
KOHA with Smart Library Solution [IoP]	Fully	16.05.19.000	2015

Libsys (WILS) [HRI]	Fully	7	2003
KOHA [TMC]	Fully	3.22	2016
KOHA [NISER]	Fully	18.11.11.000	2019
LIBSYS Premia [BARC]	Fully	6.3.8	1999
Lsmart RFID system Integrated with Libsys 10 [RRCAT]	Fully	Libsys 10 (RFID based Web centric LMS)	1995
Koha -Open Source ILMS - Integrated Library System [VECC]	Fully	20.05	2015

4.2.2 – Library Services

Library Service Type	Existing		Newly Added		Total	
Text Books	350251	5185513504	698	5900000	350949	5191413504
Reference Books	15394	67128684	694	400000	16088	67528684
e-Books	47393	115822767	35098	7090000	82491	122912767
Journals	20296	4837709928	227	11448215	20523	4849158143
e-Journals	13326	121331121	278	210000000	13604	331331121
Digital Database	659	125829262	64	7400000	723	133229262
CD & Video	6291	2166730	21	Nill	6312	2166730
Library Automation	2	7453399	Nill	Nill	2	7453399
Weeding (hard & soft)	6582	2416201	16	41821	6598	2458022

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4.2.3 – E-content developed by teachers such as: e-PG- Pathshala, CEC (under e-PG- Pathshala CEC (Under Graduate) SWAYAM other MOOCs platform NPTEL/NMEICT/any other Government initiatives & institutional (Learning Management System (LMS) etc

Name of the Teacher	Name of the Module	Platform on which module is developed	Date of launching e-content
Dr. Sumitra Bakshi Dr. Amit Janu Dr. Shivakumar Thiagrajan Dr. Shraddha Patkar Dr.	COVID and ONCOLOGY: An exclusive sessions by TMC https://www. omnicuris.com/acade	OMNICURIS	22/07/2020

| Avinash Bonda Dr. Navin Mummudi | mics/covid-and-onco logy--an-exclusive-session-by-tmc | | | | | | | |

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4.3 – IT Infrastructure

4.3.1 – Technology Upgradation (overall)

Type	Total Computers	Computer Lab	Internet	Browsing centers	Computer Centers	Office	Departments	Available Bandwidth (MBPS/GBPS)	Others
Existing	27684	342	4445	110	37	371	781	1000	364
Added	2090	11	1600	0	4	0	0	0	1
Total	29774	353	6045	110	41	371	781	1000	365

4.3.2 – Bandwidth available of internet connection in the Institution (Leased line)

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1000 MBPS/ GBPS

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4.3.3 – Facility for e-content

Name of the e-content development facility	Provide the link of the videos and media centre and recording facility
IMSc Media Lab	https://ekalavya.imsc.res.in/taxonomy/term/1225
IMSc Media Lab	https://ekalavya.imsc.res.in/taxonomy/term/1223
HRI YouTube Channel	https://www.youtube.com/channel/UCbL5k4FnxnUTWq8amIl3cAw
HBNI Webinar Series	http://www.anuvidhya.in/Students/wbnrs/lst_fls.php

4.4 – Maintenance of Campus Infrastructure

4.4.1 – Expenditure incurred on maintenance of physical facilities and academic support facilities, excluding salary component, during the year

Assigned Budget on academic facilities	Expenditure incurred on maintenance of academic facilities	Assigned budget on physical facilities	Expenditure incurredon maintenance of physical facilites
14700	14569.59	23227	22872.62

4.4.2 – Procedures and policies for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc. (maximum 500 words) (information to be available in institutional Website, provide link)

The Constituent Institutions/ Off Campus Centre of HBNI are established by the Govt. of India through the Department of Atomic Energy dedicated to the nation with said mandates and objectives. The resources such as academic buildings, laboratory infrastructure and related resources such as specialized labs infrastructure, IT computer centre, classrooms, ICT labs, sports complex, residential facility for faculty, staff and students are the facility

established following the procedures of the Govt. of India and such statutory bodies. Accordingly the maintenance and the physical facilities are under their purview, the DAE allocated budgets directly for the respective activities. The resources relating to ICT, campus infrastructure for academic and related activities are part of the major RD activities of the CIs/ grant in aid to the respective institutions following the govt. norms. Where specific facilities such as e governance peripherals are purchased, installed and maintained following due procedures of the Govt. of India. It is estimated that approximately 12 percent to 15 percent of the total cost of equipment, devices, computers, peripherals are spent on annual maintenance across all the institutions, where applicable, replacement of spares is undertaken as per the maintenance policies of the institutions. All the facilities available in the CIs is available across all the CIs/ OCC for carrying out experimental and theoretical work. For utilizing these facilities from other CIs/ OCC a communication to the in charge of the lab are made through formal and informal for use of such facilities. Some facilities are for central use of all scientists across the CIs/ OCC.

http://www.hbni.ac.in/aqar/stsrpt19_20.pdf

CRITERION V – STUDENT SUPPORT AND PROGRESSION

5.1 – Student Support

5.1.1 – Scholarships and Financial Support

	Name/Title of the scheme	Number of students	Amount in Rupees
Financial Support from institution	DAE DDFS Schemes, PDF, RA Scheme, Junior Residents in Medical Health specialities	1702	159856284
Financial Support from Other Sources			
a) National	DBT, DST, UGC-CSIR other National Schemes of the Govt. of India	346	7341000
b)International	0	Nill	0
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5.1.2 – Number of capability enhancement and development schemes such as Soft skill development, Remedial coaching, Language lab, Bridge courses, Yoga, Meditation, Personal Counselling and Mentoring etc.,

Name of the capability enhancement scheme	Date of implemetation	Number of students enrolled	Agencies involved
Soft Skill Course	01/05/2019	88	BARC TS, IGCAR and ATI, DAE
5th International Day of Yoga	21/06/2019	73	NISER
Yoga for Positive Health	25/07/2020	25	NISER
Deep Body Mind Relaxation	25/09/2020	37	NISER
Breath for Lungs	25/08/2020	33	NISER
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5.1.3 – Students benefited by guidance for competitive examinations and career counselling offered by the institution during the year

Year	Name of the scheme	Number of benefited students for competitive examination	Number of benefited students by career counseling activities	Number of students who have passedin the comp. exam	Number of studentsp placed
2019	Post Doc guidance in VECC	Nill	8	Nill	8
2019	MTech Students of BARC	Nill	88	Nill	88
2019	PGD Students of Chemical Sciences, Physical Sciences & Life Sciences	Nill	16	Nill	16
2019	MSc Students of NISER (GATE, NET)	Nill	174	Nill	104
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5.1.4 – Institutional mechanism for transparency, timely redressal of student grievances, Prevention of sexual harassment and ragging cases during the year

Total grievances received	Number of grievances redressed	Avg. number of days for grievance redressal
Nill	Nill	Nill

5.2 – Student Progression

5.2.1 – Details of campus placement during the year

On campus			Off campus		
Nameof organizations visited	Number of students participated	Number of stduents placed	Nameof organizations visited	Number of students participated	Number of stduents placed
IGCAR, BARC, RRCAT, VECC	81	81	Nill	Nill	Nill
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5.2.2 – Student progression to higher education in percentage during the year

Year	Number of students enrolling into higher education	Programme graduated from	Depratment graduated from	Name of institution joined	Name of programme admitted to
2020	156	HBNI's OCC NISER	Chemical Sciences,	various national and	PhD, Post Doc and

| 2020 | 105 | HBNI-CIs OCC | Various Boards of Studies | National International universities, research institutions | PhD, PDF and Research Positions |

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5.2.3 – Students qualifying in state/ national/ international level examinations during the year (eg:NET/SET/SLET/GATE/GMAT/CAT/GRE/TOFEL/Civil Services/State Government Services)

Items	Number of students selected/ qualifying
NET	19
SET	1
GATE	17
Any Other	4

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5.2.4 – Sports and cultural activities / competitions organised at the institution level during the year

Activity	Level	Number of Participants
Bridge, Carrom, Sports cultural event, outdoor games	Campus level staff, students and scientists	353
DAE Annual Sports and Cultural (Bridge) Meet 2019 – 20	Campus level across staff, students, scientists	300
PhD Scholars Day Mini Marathon (RRCAT)	Campus Institute level	70
Shuttle, Cricket (IGCAR)	Institute level	60
Cricket, Football (BARC)	Institute level	32

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5.3 – Student Participation and Activities

5.3.1 – Number of awards/medals for outstanding performance in sports/cultural activities at national/international level (award for a team event should be counted as one)

Year	Name of the award/medal	National/ Internaional	Number of awards for Sports	Number of awards for Cultural	Student ID number	Name of the student
2019	Inter II SER-NISER level meet	National	6	6	as in attachment	as in attachment

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5.3.2 – Activity of Student Council & representation of students on academic & administrative bodies/committees of the institution (maximum 500 words)

Students of HBNI in all the CIs/ OCC actively take part in various committees for managing the academic related matters viz., sports cultural activities, management of the mess, grievance cell, anti-ragging cell, alumni relations, other student related activities in the campus. At NISER, student representative is part of the Academic Council as well. At other CIs, research fellows organize meets of all research scholars across the country theme based, inter-disciplinary meets along with the seniors as mentors in order to gain knowledge and recent development in the inter-disciplinary fields of research and studies. The Post Graduate students also participate and organize events such as inter IISER-NISER sports cultural events at the national level. NISER students have won the national awards as well. The Alumni of HBNI has occupied positions in eminent organizations and provide academic support as when needed by the Institute at all times. An active Research Fellow Association (RFA) is present at SINP which organizes special colloquiums and film shows on regular basis. They also organize annual blood donation camp, art exhibition and tree plantation programme. RFA has representation in all committees including building maintenance, canteen, cosmetic maintenance, trasport, medical, library, workshop and disaster maintenace. Research fellows also have representation in Joint Cultural Committee that organizes cultural and sports related activities on regular basis throughout the year.

5.4 – Alumni Engagement

5.4.1 – Whether the institution has registered Alumni Association?

Yes

HBNI has initiated a central level Committee to enable alumni activities across all CIs/ OCC. The University website provide links to all alumni association of CIs./ OCC.. Alumni are engaged in building the capacity of students by providing information about scope and potential for employment. They also provide leads to new idea creation and such similar activities. The Saha Institute of Nuclear Physics Alumni Association (SINPAA) is a registered organization. The main objectives of the association are (i) to provide a forum for the reunion of the Alumni and to foster fraternity among themselves, (ii) to help and cooperate with all efforts for furthering the cause of the parent institution and (iii) to work for the improvement of Education and Research in the country at large. Similarly, TMC-ACTREC has a Registered Alumni Association the meets of the alumni are organized regularly to discuss the academic activities, seminars on new topics of relevance in the life sciences/ medical and health sciences, they are also engaged in lab and class room lectures.

5.4.2 – No. of registered Alumni:

176

5.4.3 – Alumni contribution during the year (in Rupees) :

0

5.4.4 – Meetings/activities organized by Alumni Association :

The HBNI central level Alumni Cell, met as per the Plans. The central level Alumni Cell deliberated on various activities to be undertaken at the level of CIs/ OCC. Alumni cell of TMC, NISER, SINP, HRI and IMSc held meetings of the alumni on regular basis. SINP Aluni association organized, Professor Manoj Kanti Banerjee Memorial lecture delivered by Professor Amitava Raychaudhuri, . Professor Emeritus and formerly Sir Tarak Nath Palit Professor of Physics, Department of Physics, University of Calcutta on September 19, 2019. Alumni Association organized, two Outreach Programmes in September 2019 in schools located in the districts of Nadia and North 24 Parganas of West Bengal.

CRITERION VI – GOVERNANCE, LEADERSHIP AND MANAGEMENT

6.1 – Institutional Vision and Leadership

6.1.1 – Mention two practices of decentralization and participative management during the last year (maximum 500 words)

The organizational structure of HBNI is indeed truly decentralized. The responsibilities for selection and admission of students, payment of fellowships, guidance and monitoring of progress of students, redressal of grievances of students, organization of exams and other such activities are under the purview of the CI/OCC. The Director of the CI/OCC provides overall guidance to the academic programs at the CI and sets up necessary organizational structures for the conduct of the academic programs with academic rigor. A Standing Academic Committee is set up at each CI that prescribes the course work for the students and also forms the Doctoral Committee. Every CI/OCC has one or more Deans (Academic), depending on the disciplines handled by the CI/OCC, and one Dean(Student Affairs) and a Nodal Officer who handle all the academic Governance and students' welfare activities. Participative Management: The Academic Council of HBNI has, as its members, Directors of all the CIs/OCC as well as conveners and co-conveners of Boards of Studies. Deans(Academic) are invitees to the meetings of the Academic Council. All major decisions on academic programs and processes are arrived at by discussion in the Academic Council with participation of all important functionaries of HBNI. This has ensured that the institutions are able to meet their individual objectives and at the same time, adhere to a common set of academic standards and processes. Similarly, the Standing Committee of Deans (SCD) of HBNI, chaired by Vice Chancellor, has as its members Deans(Academic) and Deans (Student Affairs) of all CIs and OCC. The finer aspects of academic governance are discussed in detail in the meetings of SCD. Case Study: Revision of Ordinances of HBNI The Ordinances of HBNI, which govern the conduct of all academic programs, were formulated in 2013. Subsequently, based on the decisions taken by Academic Council and other bodies on various topics, guidelines were issued to students, faculty as well as CIs/OCC. These guidelines covered a number of important issues and during last year (2017-18), it was decided that the ordinances need to be revised to incorporate all the guidelines and provide them a statutory base. Also, considering various developments in the field of higher education, and guidelines issued from time to time by bodies such as UGC, many changes had to be made in the ordinances. Further, ordinances had to address new courses which were started in the intervening period. Considering the comprehensive changes required, the ordinances were first drafted through several detailed deliberations within the Central Office. These were then discussed in meetings of the Standing Committee of Deans, where Deans (Academic) from all CIs and OCC participated and shared their views. The ordinances were then discussed in the Academic Council, where the Directors of CIs/OCC as well as academic experts from outside HBNI provided a number of important inputs. In order to streamline the academic and related activities Guidelines Policy documents following due process were put in place.

6.1.2 – Does the institution have a Management Information System (MIS)?

Yes

6.2 – Strategy Development and Deployment

6.2.1 – Quality improvement strategies adopted by the institution for each of the following (with in 100 words each):

Strategy Type	Details
Industry Interaction / Collaboration	New PG level programmes were introduced MSc Nuclear Medicine and Molecular Imaging Technology MSc

	Occupational Therapy (Oncology) and MSc Hospital Radio-pharmacy, all job oriented and collaborative programmes.
Teaching and Learning	New initiatives such as use of SWAYAM MOOC is encouraged as part of academic system, self learning using NPTEL in put in practice, e-Pathashala having e-learning contents are available to students and learners at all times.
Curriculum Development	Revisions and updates on the recent trends and development relevant to subjects are added updated and approved through the Academic Council for adoption across all the CIs/ OCC.

6.2.2 – Implementation of e-governance in areas of operations:

E-governace area	Details
Finance and Accounts	In order to enable faster and smooth transactions, financial software TALLY has been put to use. The asset management will also be encouraged for use.
Administration	For the purpose of purchase systems of office equipment, as per the Govt. guidelines, GeM is predominantly adopted and in practice.
Student Admission and Support	For ease of student access and communication on academic and related matters, all their progress monitoring, update of information are made online, a new web enabled management is made through www.anuvidhya.in
Planning and Development	CIs/ OCC following due process are constantly as per the market needs are introducing new academic programmes. In order to enable a fast-track mechanism, new templates for approval processes in the Institute are adopted, which is again a web-enabled system, where CIs/ OCC download the prescribed format and follow the systems and information requested for the approval mechanism.

6.3 – Faculty Empowerment Strategies

6.3.1 – Teachers provided with financial support to attend conferences / workshops and towards membership fee of professional bodies during the year

Year	Name of Teacher	Name of conference/ workshop attended for which financial support provided	Name of the professional body for which membership fee is provided	Amount of support
2019	IOP, Prof. S. Varma	Nanostructure by ION Beam	-	15666
2019	BARC, Dr. S.V. Rao	Training on Effective	-	20060

Year						
2019	BARC, Dr. Virendra Kumar	International Conference on Advances in Polymeric Materials Human Healthcare	-		7670	
2019	BARC, Dr. R.S. Ningthoujam	National Conference on Science, Technology and Application of Rare Earth	-		4000	
2019	HRI, Anirban Basu	(a) String Theory from a Worldsheet Perspective, Galileo Galilei Institute for Theoretical Physics, Florence, Italy, 15-19 April, 2019	-		115843	
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 6.3.2 – Number of professional development / administrative training programmes organized by the University for teaching and non teaching staff during the year

Year	Title of the professional development programme organised for teaching staff	Title of the administrative training programme organised for non-teaching staff	From date	To Date	Number of participants (Teaching staff)	Number of participants (non-teaching staff)
2019	Capacity building of administrative staff of CIs/ OCC	TMC: Intensive Workshop on Noting Drafting Organised by Administrative Training Institute	13/03/2019	15/03/2019	Nill	2
2019	Training of Administrative staff on	TMC: Three Days Workshop on	10/06/2019	12/06/2019	Nill	7

	Personnel matters in CIs/ OCC	"Pension Retirement Benefits and Life				
2019	Workshop on Management of Ethical Standards in CIs/ OCC	TMC: Two days Personal Re-engineering Workshop	20/06/2019	21/06/2019	Nill	6
2019	Workshop on Gender Sensitization	TMC: Two days Programme on 'Prevention of Sexual Harrassment'	10/10/2019	11/10/2019	Nill	2
2019	Short Training for Officers at the level of Group A in CIs/ OCC	IMSc: Refresher training program for Group A B Officers held at NISER, Bhuvaneshwar organised by ATI,DAE	25/11/2019	27/11/2019	Nill	3

[View File](#)

6.3.3 – No. of teachers attending professional development programmes, viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programmes during the year

Title of the professional development programme	Number of teachers who attended	From Date	To date	Duration
One-week NIAS-DST Training Programme for Women Scientists on 'Social responsibility of scientists: Pathways and outcomes' (IGCAR)	5	10/02/2020	14/02/2020	5
Workshop on emotional intelligence at work place for scientists/technologists at	1	17/02/2020	21/02/2020	5

Centre for Organization Development, Hyderabad. (RRCAT)				
[View File](#)				

6.3.4 – Faculty and Staff recruitment (no. for permanent recruitment):

Teaching		Non-teaching	
Permanent	Full Time	Permanent	Full Time
26	26	Nill	14

6.3.5 – Welfare schemes for

Teaching	Non-teaching	Students
The campus of CIs/ OCC are provided with residences for majority of the staff and faculty. These government accommodations are in the vicinity of the Institutes. There are welfare schemes for the medical needs as per the government regulations, guidelines, including their family is covered under the Contributory Health Services Scheme. Govt. of India family welfare scheme are also applicable to them. The campuses have schools for kids of all faculty and staff members. Recreational facilities, yoga room, indoor games facilities, and student focussed cultural activities form part of the campus life for teachers and staff.	The campus in the CIs/ OCC are provided with residences for majority of the staff and essential support staff.. These government accommodations are in the vicinity of the Institutes. There are welfare schemes for medical as per the government regulations, guidelines, including their family is also covered under the Contributory Health Services Scheme. Govt. of India family welfare scheme are also applicable to them.. The campuses also have school education for their kids of all staff members.	All the campus have student residences, hospitals, student amenities and activity Centres, sports facility as per the plans of the institute. Students have access to these facilities as per their needs and choices.

6.4 – Financial Management and Resource Mobilization

6.4.1 – Institution conducts internal and external financial audits regularly (with in 100 words each)

HBNI academic and related activities are audited as per the statutory functions. The Planning and Monitoring Board of HBNI reviews the academic plans envisaged for the year and reviews the progress made in the previous year. The Planning and Monitoring Board also advice on the future vision, directions and road map for all the academic activities. As per the statutory provision, statutory auditor for financial procedures and process are undertaken. The Finance Committee also recommends the statutory provisions for the institute and the recommendations are placed before the Council of Management for concurrence. Thus the Council of Management serves as an apex body for the institute functions and activities.

6.4.2 – Funds / Grants received from management, non-government bodies, individuals, philanthropies during the year(not covered in Criterion III)

Name of the non government funding agencies /individuals	Funds/ Grnats received in Rs.	Purpose
TMC CI of HBNI received grants from various Philanthropist, public funded institutions for research	102686975	Research, Equipment augumentation of labs

View File

6.4.3 – Total corpus fund generated

102686975

6.5 – Internal Quality Assurance System

6.5.1 – Whether Academic and Administrative Audit (AAA) has been done?

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic	Yes	Review by the Planning Monitoring Board, which comprises of senior academicians, eminent academicians scientists on Board.	Yes	The Council of Management the Academic Council
Administrative	No	Nill	Yes	Internal Audits of finance empanelled following due process as stipulated by the Council of Management

6.5.2 – What efforts are made by the University to promote autonomy in the affiliated/constituent colleges? (if applicable)

NOT APPLICABLE

6.5.3 – Activities and support from the Parent – Teacher Association (at least three)

The programmes offered in the CIs are at the post graduate level and primarily the interaction with the parents of the students happen as per needs and demands, as the CIs are dealing with matured students who are capable of putting their perspective as per the requirements. Feed back from the parents are obtained annually. Parents are given permission to meet and interact with authorities at CIs/ OCC and HBNI. parents are also informed about the their wards performance as per the requirements.

6.5.4 – Development programmes for support staff (at least three)

IoP: Scientific Seminar on Role of Scientific Institutions in preventing the negative effects of climate changes on 10.01.2020 IoP: Workshop for Multi Tasking Staffs on 23.11.2019 at Heavy Water Plant, Talcher IoP: Scientific Seminar for scientific staff on 23.08.2019

6.5.5 – Post Accreditation initiative(s) (mention at least three)

1. Introduction of new courses as per demand having emphasis on employability 2. Student Centric Initiatives including digital initiatives for online fee payment, streamlining the academic progress and their processes 3. Institution Digital Initiatives covering recording of lectures and making available in the form of e lectures for access to all, providing NPTEL based courses and SWAYAM courses as part of main courses.

6.5.6 – Internal Quality Assurance System Details

a) Submission of Data for AISHE portal	Yes
b)Participation in NIRF	Yes
c)ISO certification	Yes
d)NBA or any other quality audit	No

6.5.7 – Number of Quality Initiatives undertaken during the year

Year	Name of quality initiative by IQAC	Date of conducting IQAC	Duration From	Duration To	Number of participants
2019	Theme meeting on HBNI Policy, Student Feedback assessment	04/09/2019	04/09/2019	04/09/2019	10
2019	Theme meeting regarding Curriculum attainment, programme outcomes, Course Outcomes	05/12/2019	05/12/2019	05/12/2019	14
2019	Theme meeting regarding Quality Initiatives Research Innovations	13/03/2020	13/03/2020	13/03/2020	15
2019	Faculty Induction Programme 2019	20/12/2019	20/12/2019	20/12/2019	124
2019	Short Course in Severe Accidents Ph enamenology	09/09/2019	09/09/2019	14/09/2019	43

| 2019 | Certificate Course in Nuclear Law | 19/08/2019 | 19/08/2019 | 10/10/2019 | 44 |

CRITERION VII – INSTITUTIONAL VALUES AND BEST PRACTICES

7.1 – Institutional Values and Social Responsibilities

7.1.1 – Gender Equity (Number of gender equity promotion programmes organized by the institution during the year)

Title of the programme	Period from	Period To	Number of Participants	
			Female	Male
One-day gender sensitisation programme for graduating TSOs by Professor Meena Gopal, TISS	04/07/2019	04/07/2019	38	30
One day Women's day celebration in Training School Complex, HBNI & BARC TS	06/03/2020	06/03/2020	25	30
International Women's Day -2020 celebrated at Institute of Physics, Bhubaneswar . Speaker: Advocate (Ms.) Rama Sarode, Socio-legal Consultant and Trainer, Secretary-Sahyog Trust, Pune.She gave two talks titled: 1) Understanding Gender and Equalit	09/03/2020	09/03/2020	50	50

7.1.2 – Environmental Consciousness and Sustainability/Alternate Energy initiatives such as:

Percentage of power requirement of the University met by the renewable energy sources

The contribution of power requirement met by the renewable/ alternate energy sources: All CIs/ OCC implemented the power requirement as per GoI regulations using solar energy, alternate energy systems as per the norms. CIs accordingly have set up solar panels for power generation to meet institutional energy needs. Clean Green Campaign: All the CIs/ OCC follow Government of Indias guidelines and implemented generation and utilization of renewable energy sources to meet such standards. Each CI/ OCC have adopted the use of renewable energy as per the policies, accordingly budgets were made available. All the students in the Constituent institutions are engaged in Swachaata Abhiyan, tree planting in the campus common places in their regions to commemorate notified days which have direct contribution to Sustainable Dev. Goals. These activities helped students inculcate a habit for conservation of environment and natural resources. All institutions of DAE are extremely conscious about environment as can be seen from the greenery in the campuses. At Trombay campus of BARC, a Nisargruna plant has been operating to generate and process waste generated in the kitchen. It generates cooking gas and manure. A water harvesting scheme has also been implemented in the Trombay campus. For disposal of hazardous chemical waste, a plant has been set up in BARC. The chemistry laboratories encourage use of 'green chemistry' methodologies. Similar to BARC, another Nisargruna plant to process kitchen waste is installed at RRCAT Indore. Tree planting and growing of flowers is given special emphasis on all campuses and this has resulted in beautiful ambience in the campuses. Tree cover attracts birds. Greenery of IoP attracts hundreds of migratory birds every winter enroute to Chilka lake of Odisha. As part of environmental monitoring programme, studies on physio chemical, biological and geo chemical characteristics of coastal environment (water, biota and sediment) were conducted at IGCAR to meet MoEF regulation. Results of studies on biofouling organism, phytoplankton, zooplankton and fish diversity in the coastal water indicated high diversity and high density indicating the healthiness of the Kalpakkam coastal environment. Among antifouling paints screened, one was found suitable for use at MAPS water intake gate. Results of studies on dissolved heavy metal in Kalpakkam sea water indicated that the coastal water is not polluted with heavy metals. A new fish species to the world of fishery science has been identified and named as Scolopsis igcarensis, in recognition of IGCAR's contribution to marine diversity study. Water quality studies on ground water samples from Kalpakkam region were carried out for fluoride and nitrate content, fluoride content were below permissible limit, however, nitrate contents were beyond the limit in some of the areas. In one of the major CI, BARC about 60K units through Renewable Energy per year is installed.

7.1.3 – Differently abled (Divyangjan) friendliness

Item facilities	Yes/No	Number of beneficiaries
Physical facilities	Yes	4
Provision for lift	Yes	4
Ramp/Rails	Yes	4
Rest Rooms	Yes	4

7.1.4 – Inclusion and Situatedness

Year	Number of initiatives to address locational advantages and disadva	Number of initiatives taken to engage with and contribute to	Date	Duration	Name of initiative	Issues addressed	Number of participating students and staff

2020	1	1	01/04/2020	360	HARSHA SCHOOL FOR KIDS	Access to basic education	10

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7.1.5 – Human Values and Professional Ethics Code of conduct (handbooks) for various stakeholders

Title	Date of publication	Follow up(max 100 words)
Code of Ethics	21/08/2019	Homi Bhabha National Institute was created by Department of Atomic Energy by academically integrating ten of its institutions under its administrative control. One more (NISER) was added subsequently as an Off-campus centre of HBNI. Ethics and integrity have been the core values of DAE institutions and HBNI, from its inception, all necessary steps have been taken to ensure quality aspects among its faculty and students. HBNI is committed to fostering an environment of academic rigour and ethical values. A policy paper has been generated and uploaded on the HBNI website .This note describes the policy elements of HBNI with regard to ethics and integrity. This code of ethics shall apply to all the faculty members, students, research scholar sand supporting staff. The CIs/OCC of HBNI have articulated a Code of Ethics, which will be binding on the staff members and students of those organizations, in addition to the Code of Ethics outlined in the policy document. Merit is, and shall be, at the heart of every decision making in HBNI. Starting from admissions,

			examination and evaluation system, recognition of faculty, award of degrees and all related processes, merit is given the highest level of consideration. No extraneous considerations are encouraged in any decision making process. HBNI has zero tolerance for any form of academic dishonesty. Students as well as faculty shall always adhere to the highest standards of academic integrity. Any incidence of unethical practice will adversely impact the standing and reputation of the Institute, besides providing undue disadvantage to a section of students/faculty, and therefore, every student and faculty of the institute is responsible for maintaining a high standard of ethics and shall take proactive steps to maintain such standards and never abet any unethical practice. In the process of interpretation of data, preparation of research papers / reports or making presentations, they shall always ensure that due credit is given for other's work, and in no circumstances, indulge in plagiarism. Students and faculty shall also resist and bring to the notice of the appropriate authority, any instance of plagiarism or unethical practice observed by them. Details also available www.hbni.ac.in

7.1.6 – Activities conducted for promotion of universal Values and Ethics			
Activity	Duration From	Duration To	Number of participants

Prof. V. Kumar Murty : Science, ethics human values (HRI)	12/10/2019	12/10/2019	30
Prof. Pankaj Chandra : Governing Academic: Within and Without (HRI)	23/10/2019	23/10/2019	45
Prof. Suman Bhattacharjea : Are we preparing our youth for adulthood? Major findings from ASER 2017 (HRI)	27/09/2019	27/09/2019	80
Prof. Ken Ono : Why Ramanujan, the man who knew infinity, matters (HRI)	09/12/2019	09/12/2019	85
Prof. Meera Nanda : Our Missing Trading Zones: Reflections on the Gap between Theory and Practice in the History of Science in India (HRI)	20/12/2019	20/12/2019	55
View File			

7.1.7 – Initiatives taken by the institution to make the campus eco-friendly (at least five)

All CIs/ OCC of HBNI are extremely conscious about environment carbon footprint, as can be seen from the greenery in the campuses. In the Trombay campus of BARC, a Nisurgaruna plant has been operating to generate and process the waste generated from the kitchen. It generates cooking gas and organic manures. (i) A water harvesting scheme has also been implemented in the Trombay campus. For disposal of hazardous chemical waste, a plant has been set up at the BARC campus. (ii) The Chemistry laboratories encourage use of 'green chemistry' methodologies. A Nisurgaruna plant to process kitchen waste is installed at BARC, a CI of HBNI. (iii) Tree planting and growing of flowers is given special emphasis on all campuses and this has resulted in beautiful ambience in the campuses. Tree cover attracts birds. Greenery of IoP attracts hundreds of migratory birds every winter when they are on their way to the Chilka lake of Odisha. (iv) As part of environmental monitoring programme, studies on physiochemical, biological and geochemical characteristics of coastal environment (water, biota and sediment) were conducted at IGCAR to meet MoEF regulation. Results of the studies on biofueling organism, phytoplankton, zooplankton and fish diversity in the coastal water indicated high diversity and high density indicating the healthiness of the Kalpakkam coastal environment. Among antifouling paints screened, one was found suitable for use at MAPS water intake gate. Results of studies on dissolved heavy metal in Kalpakkam seawater indicated that the coastal water is not polluted with heavy metals. A new fish species to the world of fishery science has been identified and named as Scolopsis igcarensis, in recognition of IGCAR's contribution to marine diversity study. (v) Water quality studies on ground water samples from

Kalpakkam region were carried out for fluoride and nitrate content, fluoride content were below permissible limit, however, nitrate contents were beyond the limit in some of the areas. Ambient air quality monitoring at different places of IGCAR was continued to meet MoEF and AERB requirements. (vi) At TMC (Kharghar Campus), a biogas plant is installed that processes kitchen waste. Biological and toxic waste is collected separately for disposal. Vermiculture is practiced on the campus that generates manure. The animal facility has solar heating panels that provide hot water. The campus has several medicinal plants and trees.

7.2 – Best Practices

7.2.1 – Describe at least two institutional best practices

(i) To make available the extensive and unique experimental facilities available with DAE Institutions for advanced research by HBNI students and faculty and also other Research Institutions/Universities The CIs/OCC of HBNI have unique, state-of-the art research facilities, such as nuclear reactors, accelerators, etc. HBNI aims to advance indigenous nuclear technological capability by making available these research facilities to the young research students. The experimental facilities are also extended to students of other Universities, with the twin objectives of enhancing the utilisation of the national facilities and aiding the development of human resources for the country. (ii) Capacity building in cancer treatment to meet national needs One of the mandates of HBNI is to engage in the development and delivery of academic programs that can make significant impact on the society. With the growing incidence of cancers in India, there is an acute need to develop appropriate infrastructure and trained manpower for optimal delivery of quality cancer care in the country. The objective of the practice is to use academic programs as a tool to enhance the number of specialists to meet the growing requirements of cancer care in the country.

Upload details of two best practices successfully implemented by the institution as per NAAC format in your institution website, provide the link

http://www.hbni.ac.in/main/dsp_doc.html?nm=NAAC/bst_prcts.pdf

7.3 – Institutional Distinctiveness

7.3.1 – Provide the details of the performance of the institution in one area distinctive to its vision, priority and thrust in not more than 500 words

One of the distinctive characteristics of HBNI is its uniqueness as a research university, imparting knowledge and skills in the areas of nuclear sciences and engineering. HBNI was indeed established with the mission of encouraging pursuit of excellence in sciences (including engineering sciences) and mathematics in a manner that has major significance for the progress of indigenous nuclear technological capability. While HBNI academic programs provide human resource base for developing technologies relevant to nuclear power generation, programs also address strategic sector and other national mission programs, health care and other societal sectors. Nuclear science is an inter-disciplinary subject and any institute involved in its development should have expertise in several branches, viz. physical sciences, chemical sciences, life science, engineering sciences, health sciences and mathematics. Thus, scope of nuclear engineering and consequently, that of HBNI is very vast. Eleven institutions under HBNI pursue R D in several domains by taking advantage of their academic strength in specific areas. Research programs in DAE have to target innovations towards enhancing safety and economics of nuclear power and applications of radioactivity and radiation, and also address emerging technologies. Involvement of inquisitive and young minds in this endeavor is an important recipe for achieving breakthroughs. Establishment of

HBNI and its academic governance structure has made this possible. Unique ambience: The CIs of HBNI have a wide range of facilities ranging from tabletop set up to mega science facilities such as research reactors, accelerators, tokamaks, etc. Computational resources available to faculty and students are quite extensive and faculty is well trained to build own instrumentation and facilities. Thus, doctoral students have unique opportunity to work on frontline areas, with world class facilities, and most importantly, with practicing professionals as guides. As a result, academic programs of HBNI have been able to deliver a lot in terms of research output. Increasing intake of doctoral students has contributed towards realizing the full potential of research infrastructure available and helped in accelerating development of indigenous technologies. Indigenous development: Technology control regime is a challenge for development of nuclear technology, and it is necessary to develop complete range of technologies based on indigenous efforts. While nuclear technologies have applications in generation of nuclear power, radioactivity and radiation sources have a great variety of applications that provide immense societal benefits. To realize the full potential of nuclear energy development, research is required in a variety of disciplines, including life sciences, chemical sciences, physical sciences, engineering sciences and medical and health sciences, with emphasis on multidisciplinary research. Mathematics is basic to all branches of sciences and serious research in pure and applied mathematics including theoretical computer science is particularly important for indigenous development of information technologies and for cyber security. It is also necessary to pursue inter-disciplinary scientific studies on environmental, economic, technological and social issues. It is a distinct characteristic of HBNI that its students carry out research in these areas to promote nuclear science and technology.

Provide the weblink of the institution
http://www.hbni.ac.in/main/dsp_doc.html?nm=NAAC/dc.pdf

8.Future Plans of Actions for Next Academic Year

Homi Bhabha National Institute has significantly contributed to the indigenous development of nuclear science and technology by adding to the substantial knowledge in this unique domain, generating valuable human resources, and providing useful inputs to the mission programs. The academic programs in the area of medical and health sciences have led to a significant addition to the Nation's strengths in medical oncology. The University has a great potential to ramp up its contributions, expand its scope and coverage of programs and provide required human resources for a nuclear energy program, comprehensive cancer care, mega-science research, research in the frontier areas of science and technology and research and development in key areas that can provide benefits to the society. The plans of actions for the next academic year include 1. Introduction of additional skill-based courses, for example, M. Sc (Public Health and Epidemiology), M. Sc (Occupational Therapy in Oncology) 2. Introduction of more value-added courses like certificate fellowship course on (a)Pulmonary Oncology (b) Molecular-Hemato Oncology, (c) Oral Oncology with Reconstructive Surgery 3. Online advanced courses on Neutrons as probes for condensed Matter, Design of Multiphase Reactors/Contactors 4. Online outreach program-related course on Nuclear Science and Technology 5. Webinars on various important topics for the benefits of its research scholars and students. 6. Review of MTech syllabus of various CIs/OCC and carrying out revisions wherever required. 7. Preparing NAAC -SSR for the second cycle of Accreditation 8. Preparing new syllabi for external PhD students in Physical, Chemical and Life sciences at BARC.