

The Annual Quality Assurance Report (AQAR) of the IQAC  
**School of Chemical Sciences**

## Part – A

**1. Details of the Institution**

1.1 Name of the Institution	School of Chemical Sciences
1.2 Address Line 1	Takshashila Campus
Address Line 2	Khandwa Road
City/Town	Indore
State	Madhya Pradesh
Pin Code	452001
Institution e-mail address	
Contact Nos.	0731-2460208
Name of the Head of the Institution:	Prof. Ashok Kumar
Tel. No. with STD Code:	0731-2460208
Mobile:	9425962688
Name of the IQAC Co-ordinator:	Prof. A.V.Bajaj

Mobile:

IQAC e-mail address:

1.3 NAAC Track ID (For ex. MHCOGN 18879) **EC/66/RAR/146 dated 21-02-2014**

1.4 Website address:

Web-link of the AQAR:

For ex. <http://www.ladykeanecollege.edu.in/AQAR201213.doc>

1.5 Accreditation Details

Sl. No.	Cycle	Grade	CGPA	Year of Accreditation	Validity Period
1	1 <sup>st</sup> Cycle	Four Star		20/09/2000	"Five Years"
2	2 <sup>nd</sup> Cycle	B grade	2.57 out of 4	16/09/2008	"Five Years"
3	3 <sup>rd</sup> Cycle	A	3.09	21 .2. 2014	"Five Years"
4	4 <sup>th</sup> Cycle	N.A	N.A	N.A	N.A

1.6 Date of Establishment of IQAC :

DD/MM/YYYY

1.7 AQAR for the year (*for example 2010-11*)

1.8 Details of the previous year's AQAR submitted to NAAC after the latest Assessment and Accreditation by NAAC (*for example AQAR 2010-11 submitted to NAAC on 12-10-2011*)

- i. AQAR \_\_\_\_\_ 2014-15 on 31-07-2015 \_\_\_\_\_
- ii. AQAR \_\_\_\_\_ 2015-16 on \_03-09-2016 \_\_\_\_\_
- iii. AQAR \_\_\_\_\_ (DD/MM/YYYY)
- iv. AQAR \_\_\_\_\_ (DD/MM/YYYY)

## 1.9 Institutional Status

University State  Central  Deemed  Private

Affiliated College Yes  No

Constituent College Yes  No

Autonomous college of UGC Yes  No

Regulatory Agency approved Institution Yes  No

(eg. AICTE, BCI, MCI, PCI, NCI)

Type of Institution Co-education  Men  Women

Urban  Rural  Tribal

Financial Status Grant-in-aid  UGC 2(f)  UGC 12B

Grant-in-aid + Self Financing  Totally Self-financing

## 1.10 Type of Faculty/Programme

Arts  Science  Commerce  Law  PEI (Phys Edu)

TEI (Edu)  Engineering  Health Science  Management

Others (Specify)

1.11 Name of the Affiliating University (*for the Colleges*)

NA

## 1.12 Special status conferred by Central/ State Government-- UGC/CSIR/DST/DBT/ICMR etc

Autonomy by State/Central Govt. / University

University

University with Potential for Excellence	<input type="text"/>	UGC-CPE	<input type="text"/>
DST Star Scheme	<input type="text"/>	UGC-CE	<input type="text"/>
UGC-Special Assistance Programme	<input type="text" value="√"/>	DST-FIST	<input type="text"/>
UGC-Innovative PG programmes	<input type="text"/>	Any other ( <i>Specify</i> )	<input type="text"/>
UGC-COP Programmes	<input type="text"/>		

## **2. IQAC Composition and Activities**

2.1 No. of Teachers	<input type="text" value="05"/>
2.2 No. of Administrative/Technical staff	<input type="text" value="03"/>
2.3 No. of students	<input type="text" value="03"/>
2.4 No. of Management representatives	<input type="text" value="--"/>
2.5 No. of Alumni	<input type="text" value="02"/>
2.6 No. of any other stakeholder and community representatives	<input type="text"/>
2.7 No. of Employers/ Industrialists	<input type="text" value="01"/>
2.8 No. of other External Experts	<input type="text" value="--"/>
2.9 Total No. of members	<input type="text" value="14"/>
2.10 No. of IQAC meetings held	<input type="text" value="07"/>

2.11 No. of meetings with various stakeholders: No.  Faculty   
 Non-Teaching Staff  Students  Alumni  Others

2.12 Has IQAC received any funding from UGC during the year? Yes  No   
 If yes, mention the amount

2.13 Seminars and Conferences (only quality related)

(i) No. of Seminars/Conferences/ Workshops/Symposia organized by the IQAC

Total Nos.  International  National  State  Institution Level

(ii) Themes

2.14 Significant Activities and contributions made by IQAC

IQAC conceived of infusing further rigour in execution of all academic programmes so that students are encouraged to face challenges in emerging careers in chemical sciences. To meet this objective, brain storming sessions were held. It was decided to hold the expert lectures from time to time. Sound planning of the course work teaching for Ph.D students was undertaken.

2.15 Plan of Action by IQAC/Outcome

The plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement and the outcome achieved by the end of the year \*

Plan of Action	Achievements
<ul style="list-style-type: none"> <li>• Strict adherence to the academic schedule</li> <li>• Effective teaching – learning pedagogy to support NET,GATE examinations aspiring students</li> <li>• Focus on quality of research</li> </ul>	<p>Academic calendar was strictly maintained</p> <p>Some students have got success in achieving this goal.</p> <p>Research of the faculty members is acclaimed world wide. Publications in the journals of repute and good impact factor are the testimony to the effort.</p>

\* Attach the Academic Calendar of the year as Annexure.

2.15 Whether the AQAR was placed in statutory body Yes  No

Management  Syndicate  Any other body

Provide the details of the action taken

## Part – B

## Criterion – I

1. Curricular Aspects

## 1.1 Details about Academic Programmes

Level of the Programme	Number of existing Programmes	Number of programmes added during the year	Number of self-financing programmes	Number of value added / Career Oriented programmes
PhD	1	-	-	
PG	3		-	
UG	-	-	-	
PG Diploma	-	-	-	
Advanced Diploma	--	-	-	
Diploma	-	-	-	
Certificate	-	-	-	
Others	-	-	-	
<b>Total</b>	<b>4</b>	-	-	
Interdisciplinary				
Innovative				

- 1.2 (i) Flexibility of the Curriculum: CBCS/Core/Elective option / Open options: **Core/Elective option**  
(ii) Pattern of programmes:

Pattern	Number of programmes
Semester	3
Trimester	
Annual	

- 1.3 Feedback from stakeholders\* Alumni  Parents  Employers  Students   
*(On all aspects)*

Mode of feedback : Online  Manual  Co-operating schools (for PEI)

\*Please provide an analysis of the feedback in the Annexure

- 1.4 Whether there is any revision/update of regulation or syllabi, if yes, mention their salient aspects.

- Modification in the evaluation pattern and syllabi as per CBCS.
- Revision of Ph.D. Ordinance

- 1.5 Any new Department/Centre introduced during the year. If yes, give details.

NA

**Criterion – II****2. Teaching, Learning and Evaluation**

2.1 Total No. of permanent faculty	Total	Asst. Professors	Associate Professors	Professors	Others
	08(including 01 retired in Dec.2015)	Nil	Nil	07 +01 retired	

2.2 No. of permanent faculty with Ph.D.

08
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2.3 No. of Faculty Positions Recruited (R) and Vacant (V) during the year

Asst. Professors		Associate Professors		Professors		Others		Total	
R	V	R	V	R	V	R	V	R	V

2.4 No. of Guest and Visiting faculty and Temporary faculty

01(Contractual)
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2.5 Faculty participation in conferences and symposia:

No. of Faculty	International level	National level	State level
Attended		05	
Presented papers		04	
Resource Persons		03	

2.6 Innovative processes adopted by the institution in Teaching and Learning:

- ICT enabled teaching and learning pedagogy
- Projection of video lectures, ppt, and web- Tutorials
- More focus towards interactive discussions between student vs teacher
- Seminars, Tutorials, Syllabus based Assignments, New laboratory Practicals

2.7 Total No. of actual teaching days during this academic year

186
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2.8 Examination/ Evaluation Reforms initiated by the Institution (for example: Open Book Examination, Bar Coding, Double Valuation, Photocopy, Online Multiple Choice Questions)

Encouragement for short concept based questions, Online Entrance Examination
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2.9 No. of faculty members involved in curriculum restructuring/ revision/syllabus development

08
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as member of Board of Study/Faculty/Curriculum Development workshop

2.10 Average percentage of attendance of students

81
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2.11 Course/Programme wise distribution of pass percentage :

Title of the Programme	Total no. of students appeared	Division				
		Distinction %	I %	II %	III %	Pass %
M.Sc.	30	6.6 (2)	60(18)	33.3(10)	---	100(30)

2.12 How does IQAC Contribute/Monitor/Evaluate the Teaching & Learning processes:

**Through regular feedback sessions**

2.13 Initiatives undertaken towards faculty development

<i>Faculty / Staff Development Programmes</i>	<i>Number of faculty benefitted</i>
Refresher courses	
UGC – Faculty Improvement Programme	
HRD programmes	
Orientation programmes	
Faculty exchange programme	
Staff training conducted by the university	
Staff training conducted by other institutions	
Summer / Winter schools, Workshops, etc.	
<b>Others: Conferences/seminars attended by the faculty members</b>	<b>05</b>

2.14 Details of Administrative and Technical staff

Category	Number of Permanent Employees	Number of Vacant Positions	Number of permanent positions filled during the Year	Number of positions filled temporarily
Administrative Staff	06	02		02(Daily wager)
Technical Staff	05	06		-

**Criterion – III****3. Research, Consultancy and Extension**

## 3.1 Initiatives of the IQAC in Sensitizing/Promoting Research Climate in the institution

In order to sensitize the excellence in research and maintain a research environment of intellectual integrity, as well as scholarly and scientific rigour, our school's IQAC follows the principles of code of research ethics

## 3.2 Details regarding major projects

	Completed	Ongoing	Sanctioned	Submitted
Number		01+ 01		01
Outlay in Rs. Lakhs		Rs.44.84 Lakh (DRDO, Delhi)	SAP-UGC: 1.26 Crore , UGC XII plan 20 lakhs	-

## 3.3 Details regarding minor projects

	Completed	Ongoing	Sanctioned	Submitted
Number	01			
Outlay in Rs. Lakhs	01 Lakh (Seed money from University)			

## 3.4 Details on research publications

	International	National	Others
Peer Review Journals	22		
Non-Peer Review Journals			
e-Journals			
Conference proceedings			

## 3.5 Details on Impact factor of publications:

Range  Average  43.1/22

h-index  Nos. in SCOPUS

3.6 Research funds sanctioned and received from various funding agencies, industry and other organisations

Nature of the Project	Duration Year	Name of the funding Agency	Total grant sanctioned	Received
Major projects	3 yr	DRDO, New Delhi	44.84 Lakh	
Minor Projects				
Interdisciplinary Projects				
Industry sponsored				
Projects sponsored by the University/ College	02	DAVV	2 Lakh	1 Lakh
Students research projects <i>(other than compulsory by the University)</i>				
Any other(Specify)				
Total				

3.7 No. of books published i) With ISBN No.  Chapters in Edited Books

ii) Without ISBN No.

3.8 No. of University Departments receiving funds from

UGC-SAP  CAS  DST-FIST   
 DPE  DBT Scheme/funds

3.9 For colleges  
 Autonomy  CPE  DBT Star Scheme   
 INSPIRE  CE  Any Other (specify)

3.10 Revenue generated through consultancy

3.11 No. of conferences organized by the Institution

Level	International	National	State	University	College
Number	-	-	-	-	-
Sponsoring agencies	-	-	-	-	-

3.12 No. of faculty served as experts, chairpersons or resource persons

3.13 No. of collaborations International  National  Any other

3.14 No. of linkages created during this year

3.15 Total budget for research for current year in lakhs :

From Funding agency

- DRDO Project: Rs.44.84 Lakh
- SAP-UGC: 1.26 Crore (sanctioned)

From Management of University/College

Nil

Total

3.16 No. of patents received this year

Type of Patent		Number
National	Applied	Nil
	Granted	Nil
International	Applied	Nil
	Granted	Nil
Commercialised	Applied	Nil
	Granted	Nil

3.17 No. of research awards/recognitions received by faculty and research fellows of the institute in the year

Total	International	National	State	University	Dist	College
03		01 (National Rajeev Gandhi Fellowship to Mr. Jagat Singh Kirar)	02 (MPCST Young Scientist Trainee Fellowship to Ms.Gagandeep Kaur Reen and Ms.Monika Ahuja)			

3.18 No. of faculty from the Institution who are Ph. D. Guides and students registered under them

08

3.19 No. of Ph.D. awarded by faculty from the Institution

05

- (i) Dr.Anju Pathak (2016)
- (ii) Dr.Pawan Kumar Sharma (2016)
- (iii) Dr.Akrati Verma (2015)
- (iv) Dr.Jaswant Carpenter (2015)
- (v) Dr.Sheenu Bhadoriya (2015)
- (vi) Dr.Neena Shrivastav (2015)

- (vii) Mr.Ravi Vishwakarma (submitted 2016)
- (viii) Mr.Sunil Patidar (submitted 2016)
- (ix) Ms.Preeti Shrivastav (submitted 2016)
- (x) Ms.Pruna Lamba (submitted 2016)

3.20 No. of Research scholars receiving the Fellowships (Newly enrolled + existing ones)

JRF  SRF  Project Fellows  Any other

3.21 No. of students Participated in NSS events:

University level  State level   
 National level  International level

3.22 No. of students participated in NCC events:

University level  State level   
 National level  International level

3.23 No. of Awards won in NSS:

University level  State level   
 National level  International level

3.24 No. of Awards won in NCC:

University level  State level   
 National level  International level

3.25 No. of Extension activities organized

University forum  College forum   
 NCC  NSS  Any other

3.26 Major Activities during the year in the sphere of extension activities and Institutional Social Responsibility

- Orientation program was organized for newly admitted students in University Auditorium.
- One of the faculty member is the In-charge of University Day Care Centre(Institutional Social Responsibility)
- Faculty and Students supported the following social activities-
  - Blood Donation Camp
  - Sale of flags
  - Green Policy Efforts
  - Camus cleanliness drive

**Criterion – IV****4. Infrastructure and Learning Resources**

## 4.1 Details of increase in infrastructure facilities:

Facilities	Existing	Newly created	Source of Fund	Total
Campus area	Approx.5000 sq. ft.			
Class rooms	04			
Laboratories	02+08			
Seminar Halls	01			
No. of important equipments purchased ( $\geq$ 1-0 lakh) during the current year.	Computers, laboratory equipments	Computers, laboratory equipments Rs.1.91 Lakh	UGC XII plan grant and Departmental contingency	Rs.1.91 Lakh
Value of the equipment purchased during the year (Rs. in Lakhs)		Colourimeter, Conductivitymeter, PH meter, Potentiometer, Spectrophotometer Total =Rs.1.67 Lakh	UGC XII plan grant and Departmental contingency	Total =Rs.1.67 Lakh
Others				

## 4.2 Computerization of administration and library

Yes

## 4.3 Library services:

	Existing		Newly added		Total	
	No.	Value	No.	Value	No.	Value
Text Books	966	-	300	Rs.98100/-	1266	Rs.98100
Reference Books	710	-	-	--	710	-
e-Books						
Journals						
e-Journals (from central library)	388					
Digital Database						
CD & Video						
Others (specify)	Downloaded articles: More than 1.5 Lakh					

4.4 Technology up gradation (overall)

	Total Computers	Computer Labs	Internet	Browsing Centres	Computer Centres	Office	Departments	Others
Existing	38	01	12		01	01		
Added	04							
Total	42							

4.5 Computer, Internet access, training to teachers and students and any other programme for technology upgradation (Networking, e-Governance etc.)

All teachers are technology friendly. Students have the access to use the internet facility in the department and IT centre

4.6 Amount spent on maintenance in lakhs :

i) ICT	1.91 Lakh
ii) Campus Infrastructure and facilities	1.66 Lakh
iii) Equipments	1.67 Lakh
iv) Others	
<b>Total :</b>	<b>5.24 Lakh</b>

**Criterion – V****5. Student Support and Progression**

## 5.1 Contribution of IQAC in enhancing awareness about Student Support Services

IQAC contributes in enhancing student support services. Focus of the department is on capacity-building of students and accordingly variable levels of learning are identified and actively nurtured. Mentoring Concept is the process of implementation and focuses on overall development of the students. During the induction programme students were informed about all the support services available in the premises/campus.

## 5.2 Efforts made by the institution for tracking the progression

Academic mentoring is implemented in School of Chemical Sciences in formal as well as informal mode. Students have the liberty to approach the teachers in their respective rooms or even in corridors. Students are encouraged to formulate their road-maps for academic growth.

UG	PG	Ph. D.	Others
-	56	22	

## 5.3 (a) Total Number of students

(b) No. of students outside the state

Nil

(c) No. of international students

Nil

Men	No	%	Women	No	%
	34	44		44	56

Last Year						This Year					
General	SC	ST	OBC	Physically Challenged	Total	General	SC	ST	OBC	Physically Challenged	Total
13	05	02	10	Nil	30	09	02	02	13	Nil	26

Demand ratio **3:1**

Dropout %



5.4 Details of student support mechanism for coaching for competitive examinations (If any)

Yes, consultation and guidance provided to students, wherever applicable.

Seven students of the department have joined Services of State Forensic Sciences Laboratory as the Scientific Officers.

Some of the students have qualified NET-JRF, NET-LS and GATE examinations.

No. of students beneficiaries

5.5 No. of students qualified in these examinations

NET	<input style="width: 30px; text-align: center;" type="text" value="02"/>	SET/SLET	<input style="width: 30px;" type="text"/>	GATE	<input style="width: 30px; text-align: center;" type="text" value="04"/>	CAT	<input style="width: 30px;" type="text"/>
IAS/IPS etc	<input style="width: 30px;" type="text"/>	State PSC	<input style="width: 30px;" type="text"/>	UPSC	<input style="width: 30px;" type="text"/>	Others	<input style="width: 30px; text-align: center;" type="text" value="07"/>

5.6 Details of student counselling and career guidance

School of Chemical Sciences recognizes the fact that higher education in 20<sup>th</sup> century was process-oriented whereas that in 21<sup>st</sup> century is result-oriented. Accordingly, measures are taken to familiarize the students with contemporary requirements and appropriate nurturing activities oriented towards career counselling; soft-skill development and career path identification are organized from time to time.

No. of students benefitted

5.7 Details of campus placement

<i>On campus</i>			<i>Off Campus</i>
Number of Organizations Visited	Number of Students Participated	Number of Students Placed	Number of Students Placed
			52%

5.8 Details of gender sensitization programmes

We strictly follow the gender reservation policy of the government.

5.9 Students Activities:

- Students participated in inter - departmental sports and cultural activities
- Students organizes various department level activities such as the celebrations of teachers day, induction programme, seminars, quizzes etc.

5.9.1 No. of students participated in Sports, Games and other events

State/ University level  National level  International level

No. of students participated in cultural events

State/ University level  National level  International level

5.9.2 No. of medals /awards won by students in Sports, Games and other events

Sports: State/ University level  National level  International level

Cultural: State/ University level  National level  International level

5.10 Scholarships and Financial Support

	Number of students	Amount
Financial support from institution		
Financial support from government: Post metric scholarship to SC/ST/OBC students	SC= 03(2+3) ST= 04(2+2) OBC= 20(8+12) Total= 27	Rs.1,01710/- Rs.82940/- Rs.3,08645 Total=4,93,295/-
Financial support from other sources	Ph.D.Scholars:01	Rs. 27, 500/pm(revised) (Mr. Nitin Dubey, DRDO -JRF)
Number of students who received International/ National recognitions		

5.11 Student organised / initiatives

Fairs : State/ University level  National level  International level

Exhibition: State/ University level  National level  International level

5.12 No. of social initiatives undertaken by the students

5.13 Major grievances of students (if any) redressed: \_\_\_\_\_No\_\_\_\_\_

**Criterion – VI****6. Governance, Leadership and Management**

## 6.1 State the Vision and Mission of the institution

## Vision:

To create an academically sound environment that nurtures, motivates and inspires excellence in research and teaching in chemical sciences along with concern for society

## Mission:

To impart theoretical and practical training in advanced areas of chemical Sciences and contribute new knowledge through research which encourages creativity, insight development and a passion for science

## 6.2 Does the Institution has a management Information System

Department comprises of Head of the Department (who is accountable for overall responsibility to run the department), faculty members, and non- teaching staff members. All the faculty members follow the instructions and orders given by the HOD/ University administration and participate in various decision making policies. Non teaching staff supports in variety of ways in the administrative/official functioning of the department.

## 6.3 Quality improvement strategies adopted by the institution for each of the following:

## 6.3.1 Curriculum Development

- Optimum use of flexibility approach to explore the unexplored domains so as to upgrade curriculum from time to time.
- IQAC vis-a-vis faculty members take initiatives in the curriculum design, development and restructuring.
- The department interacts with the stakeholders' viz., students, Pass-out graduates, Alumni, external academic/ industry experts for curriculum design and development.

## 6.3.2 Teaching and Learning

- Our faculty members impart high quality advance knowledge to the students. They keep themselves updated through consulting latest books, journals, web knowledge. Faculty members regularly participate in seminars/workshops/symposia at national and international levels. They share their experiences and knowledge gained through such an exposure with the students.
- Teaching done through ICT (PowerPoint) and class room board teaching. Various methods adopted are Lecture methods, interactive class room teaching, quiz, assignments, seminars, Group discussions and activity based learning.

## 6.3.3 Examination and Evaluation

- CBCS based Semester system is followed in its true spirit. Answer sheets are shown to the students after evaluation.
- The time table of teaching schedule is declared latest by 5th July for the Odd Semester and by 5th January for even semester. The mid-term tests and end semester examination are conducted as per semester schedule. Annual results are declared before 30<sup>th</sup> May.

## 6.3.4 Research and Development

- The School has achieved notable excellence in research and teaching.
- The faculty is extremely well qualified and motivated with a strong commitment to research.

## 6.3.5 Library, ICT and physical infrastructure / instrumentation

Adequate facilities related to library, ICT and infrastructure/instruments are available for use in the department and university premises.

## 6.3.6 Human Resource Management

Faculty members cooperate with the university in formulating relevant policies and evolving the execution pathways for emerging situations.

## 6.3.7 Faculty and Staff recruitment

University takes initiatives in the recruitment of staff and faculty.

## 6.3.8 Industry Interaction / Collaboration

- The department has good interactions with various industries viz., Grasim, IPCA, Medilux etc. A number of students of this school are holding prestigious positions in various industries viz., Ranbaxy (Now Sun Pharma), Sai-Advantium, Cipla, Dr.Reddy's, Alembic, Jubilant Pharma, Mylan, Medilux etc.
- Collaborative research work is being carried out by the School as evidenced by Research publications
- We are in contact with the other universities and national laboratories of the nation for fruitful academic interaction.

6.3.9 Admission of Students

- M.Sc. students are admitted through online Common Entrance Test conducted by the School
- Admission for Ph.D. degree is done through Doctoral Entrance Test (DET) conducted by the University and Interview in the School through Departmental Research Committee (DRC) followed by interview before Research Degree Committee (RDC)
- Reservation norms were followed for SC/ST/OBC/Women and students with varied disabilities as per State Government Rules

6.4 Welfare schemes for

Teaching	Teachers Welfare fund
Non teaching	Welfare fund for non-teaching staff
Students	Scholarships to SC/ST/OBC students

6.5 Total corpus fund generated

6.6 Whether annual financial audit has been done Yes No

6.7 Whether Academic and Administrative Audit (AAA) has been done?  Yes  No

Audit Type	External		Internal	
	Yes/No	Agency	Yes/No	Authority
Academic				
Administrative				

6.8 Does the University/ Autonomous College declare results within 30 days?

For PG Programmes Yes  No

6.9 What efforts are made by the University/ Autonomous College for Examination Reforms?

We strictly follow the Ordinance 31 in the conduct of department/semester examination. We have the freedom to work independently and practice autonomy.

This is manifested as follows:

- Separate entrance examination for admission in various courses
- Autonomy to conduct examination at department level (as per Ordinance no.31)
- Strict adherence to the University rules and regulations (accountability)

6.10 What efforts are made by the University to promote autonomy in the affiliated/constituent colleges?

NA

6.11 Activities and support from the Alumni Association

School of Chemical Sciences has initiated steps to build an alumni base which is expected to give inputs from different work cultures and environment for upcoming scientific talents of the department. Feedback and suggestions of alumni is properly recorded and appropriate measures are taken.

6.12 Activities and support from the Parent – Teacher Association

Interactions with the parents are regular features.

6.13 Development programmes for support staff

Non-teaching Staff encouraged for enhancing their computer skills

6.14 Initiatives taken by the institution to make the campus eco-friendly

**Energy conservation:** It is in the practice of all the stake-holders of the department to conserve energy by all means. We save water and electricity as far as possible.

**Use of renewable energy:** Many of the chemical reactions are based on the utilization of recycled water ..

**Water harvesting:** We save rain water in the containers and use it as a supplementary substitute of distilled water for laboratory purposes. Also, pit holes in the garden serve as recharging devices.

**Efforts for Carbon neutrality:** We maintain carbon footprint by cultivating a variety of plants in the vicinity of the department.

**Plantation:** This activity is a regular feature of the department. Faculty members, students and non teaching staff participate in plantation activities. To have natural beauty, efforts towards cultivation of horticultural plants were made. Day- by- day garden of the department is becoming beautiful and attractive.

**Criterion – VII****7. Innovations and Best Practices**

7.1 Innovations introduced during this academic year which have created a positive impact on the functioning of the institution. Give details.

- ICT enabled advanced teaching- learning
- Excellent research
- Exposure to the students by the sophisticated spectro-analytical techniques
- Eco-friendly experimental approaches
- Committed sincerity in maintaining the academic schedule
- CBCS based curriculum implementation

7.2 Provide the Action Taken Report (ATR) based on the plan of action decided upon at the beginning of the year

School's mission is to provide high quality education and training for high flying career in Chemical Sciences. Based on the distinguishing features, following credentials are to our credit:

- Curriculum design and implementation as per CBCS system
- Theoretical and practical knowledge of Instrumental Techniques.
- Interpretation of various types of spectra by the M.Sc. students.
- The School has achieved notable excellence in research and teaching.
- The faculty is extremely well qualified and motivated with a strong commitment to research.
- The strength of the school has been highlighted through a number of good quality publications in the journals of high impact factor.
- The research contribution of faculty members has been widely acclaimed by the scientific community around the world.
- We strictly maintain the time schedule to run the academic curriculum.

7.3 Give two Best Practices of the institution (*please see the format in the NAAC Self-study Manuals*)

**1. Title of the Practice:**

- (i) Excellence in Research and teaching
- (ii) Strict adherence to the annual academic schedule

**2. Objectives of the Practice**

With regard to the practices cited above, our department considers the objectives that are stated below:

- To help the students to come up with flying colours by providing them excellent research and classroom learning
- To assist the students in achieving their targeted goals
- To adhere to a disciplined and punctual academic schedule



## 7.4 Contribution to environmental awareness / protection

- Hazardous waste management: We try to avoid any hazardous agent in the department. Moreover, any such hazardous material has been disposed after its neutralization by chemical means.
- E-waste management: If there is any e-waste, initially it is stored in a proper room followed by its disposal to appropriate place taking into account the defined official procedure.

7.5 Whether environmental audit was conducted? Yes  No

7.6 Any other relevant information the institution wishes to add. (for example SWOT Analysis)

**Strengths**

- (1) Active research groups in the fields of Nanomaterials, Catalysis, Organic/ Inorganic Synthesis, and theoretical chemistry
- (2) Provides high quality education and training for high flying careers in Chemical Sciences.
- (3) Theoretical and practical knowledge of Instrumental Techniques, Interpretation of various types of spectra. Nuclear Magnetic Resonance (NMR) Electron, Spin Resonance (ESR), Fourier Transform Infrared (FT-IR), Ultraviolet-Visible (UV-Visible), Mossbauer, Mass Spectrometry
- (4) Highly qualified and motivated internationally and nationally recognized faculty with a strong commitment to research.
- (5) Credible approach for opportunity management for students through exhaustive support from faculty members and alumni.

**Weaknesses**

- (1) In recent years, the availability of students with mathematics back-ground pursuing chemical sciences is very limited.
- (2) Disparity in the intellectual levels of students so that learning group is indeed heterogeneous rather than composite.
- (3) Inadequate infrastructure for overall academic activities
- (4) Inadequate availability of support personnel for office work.
- (5) Dependence on other institutes for sophisticated instrumental facility.

**Opportunities**

- (1) New International and National level collaborations proposed to be undertaken in near future so as to enhance capacity building in knowledge creation
- (2) Research skill and aptitude of the faculty and the students used for new innovations.
- (3) Exploration of avenues for linkage of Science with Technology.

- (4) Optimum use of flexibility approach to explore the unexplored domains so as to upgrade curriculum from time to time.
- (5) Enhanced use of animation in class room lectures so as to build better bridge between teacher and the taught.
- (6) To develop strong interface between the institute and industry.

### Challenges

- (1) New innovations and adaptability to emerging demands of sectors related to Chemical Sciences.
- (2) Linkage of chemical sciences with technology so that excellence can be achieved at international level.
- (3) Mobilization of knowledge creation with knowledge propagation.
- (4) Overall up-gradation of learning atmosphere for Chemistry in the entire University through enhanced interaction of University and College teachers.
- (5) To develop prudent approach in the students taking NET and similar quality oriented competitive examinations.
  - Faculty members would be encouraged to participate in seminars and conferences
  - Collaborative research activities will be promoted.

### 8. Plans of institution for next year

- To develop prudent approach in the students taking NET/SLET and similar quality oriented competitive examinations
- It is planned to increase the diversity in spectral interpretation with orientation towards new examples and relevant patterns
- Review, Restructuring, and Up-gradation of the recently introduced CBCS based M.Sc. curriculum
- Students will be encouraged to develop their soft skills and communication skills.
- Faculty members would be encouraged to participate in seminars and conferences
- Collaborative research activities will be promoted.
- Modernization of laboratories

Name **Prof. A.V.Bajaj**

**Prof. Ashok Kumar**

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*Signature of the Coordinator, IQAC*

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*Signature of the Chairperson, IQAC*

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