

ANNUAL QUALITY ASSURANCE REPORT

2010-2011



RANI DURGAVATI UNIVERSITY, JABALPUR
MADHYA PRADESH

Part A

A Plan of action chalked out by the IQAC in the beginning of the year towards quality enhancement

The Internal Quality Assurance Cell (IQAC) of Rani Durgavati University has decided following Plans for their implementation during the academic year 2010-11. As has been the experience from our earlier practice and the results obtained therefrom, the proposed plans placed under principally three categories of Institutional organizational policies, Quality teaching and students' progression, and Research and infrastructural support. The classification is characterized by the need of efforts focused on the development at three vital components of the institution. IQAC sought the participation of faculty members, research scholars, students, and university administration for implementation of proposed plans, and to maintain frequent appraisal of deliverables.

Institutional organizational policies

1. To undertake various programmes related to community services involving the faculty/students/staff members. Rani Durgavati University acknowledges excellence in the Quality of Education and progress to the various stakeholders of the society.
2. To maintain a right blend of permanent and guest faculty/contractual staff members in the University. The IQAC proposed a stronger mechanism of providing opportunities to senior research scholars in teaching programmes at postgraduate level to the extent of not more than two lectures per week.
3. To strengthen further processes involving computerization of administration, students' admission, processing of examination results, and certification.
4. To augment placement activities in the campus by establishing permanent link with industries and other organization in order to provide a broad platform to students to exercise their placement preferences.

Quality teaching and students' progression

5. To initiate new courses of job orientation potential including acquiring in-field practical skills by mobilizing students through organizations of national repute. This would also empower them to serve the society effectively in areas of current relevance.
6. To maintain an efficient and model faculty feedback mechanism as a tool of quality enhancement and improvisation. IQAC acclaims participation of all teaching departments of the university.
7. To emphasize students' practical skills on modern instrumentation, and by ability to design experimentation to solve newer problems. Support of senior research scholars as demonstrators in workshops shall be solicited.
8. To formulate mechanism for students progression. This involves enhanced participation of students in activities based on oral and power point presentations, and through poster sessions in the departments. A model evaluation system is planned based on these activities together with conventional written examinations.

Research and infrastructural support

9. To further emphasize organizing research projects dealing with challenging problems of local relevance *vis-a-vis* international technological knowhow and developments. IQAC encourages research proposals dealing with mobilization of faculty and students, and participation of subject experts from other institutions.

10. To organize MOUs on prime bilateral issues involving mutual benefit. Such collaborations between other research, industrial, and art/cultural organizations will enhance the performance of departments both at teaching and research level. Participation of progressing students and research scholars will be encouraged.
11. To take initiatives on deliberation of quality research, articles, books and monographs in peer reviewed journals and publication houses at national and international level. The IQAC wishes to keep abreast research scholars and faculty members on publication issues such as citation index, impact factor, *h*-index, and personal appraisal keys such as academic performance index.
12. To integrate the efforts of all teaching departments and university central facilities in updating the infrastructural capabilities. This would involve attaining IQAC objectives under the assistance of UGC through its various funding programmes.

Part B

1. Activities reflecting the goals and objectives of the institution

Activities were organized as planned for 2010-11 involving all the major components of the university. The IQAC held formative sessions on the goals and objectives of the institution, and invited mechanism to achieve them in a time-bound manner. Interactive meetings with the stakeholders have been of immense help in formulating the action plan.

The major activities conducted to achieve the goal and objectives are summarized below. Other achievements are described with substantiation under the paragraphs to follow.

- (i) The University organized a number of seminars, workshops and conferences on topics of relevance to share recent developments in research, teaching and professional skills. Sessions were held with the assistance of outside experts on personality developments among students, and career guidance.
- (ii) The university has undertaken building new and stronger infrastructural support to students, faculty and staff of the institution.
- (iii) Alumni and Parent-Teacher meetings were called periodically at teaching department/institutional level. Expert advice and professional experiences of alumni/parents were discussed on need for new courses, and on-site skill development of students.
- (iv) Faculty members of the university have been able to obtain financial support from national agencies for their research. A number of research scholars have also been supported under the projects.
- (v) High quality research papers have been published in impact journals. Faculty members published monographs and books on topics of current studies and research.
- (vi) A serious concern was laid down on undergoing the due second circle of NAAC accreditation. The performance of university both at department and administrative levels has been reviewed. Strategy for self-study report evaluated.

2. New academic program initiated (UG & PG)

Attention was paid to modify or introduce new papers at degree level in addition to the existing programmes of the UGC. This was so effected that students shall have wide exposure to advanced concepts and their applications. The practical parts of curricula have also been modified providing emphasis on experiment designing, and data handling by software applications.

3. Innovations in curricular design and transaction

Four value added programmes have been added. The designing has been considered to follow new perspectives in contents materials of the syllabi, and thought to provide operational abilities among the students. The innovations that have been brought in the core curriculum are believed to gain popularity owing to linking of education with professional strength.

4. Inter-disciplinary programs started

Some optional papers of interdisciplinary nature have been initiated in certain departments of the university. The UGC curriculum listed a number of such programmes out of which many new were opted with necessary up-dation and modifications. Mutually sharing faculty and students has been a key feature for such newly introduced papers, and this has evinced profound confidence among students.

5. Examination reforms implemented

All teaching programmes are conducted on semester basis. The scheme of Continuous Comprehensive Evaluation (CCE) resulted wide popularity and in attaining preparedness among students. CCE also provided a measure on frequent evaluation of students. The deliverables are critically discussed at department level, and future measures are formulated. The weakly performing groups of students, located through the process, are supported by special teaching sessions and tutorials. A modular format of each question paper in all subjects was followed. It comprises of unit-wide format of questions that are based on multiple choice to employ analytical skills, short answers to develop precision, and long but concise answers to acquire criticism and accuracy in discussion. The question paper marks have been suitably and evenly distributed among the sub-questions.

The IQAC further plans to introduce a modified system in the experimental/dissertation part of the examination. However, such new plans are still under active debate.

6. Candidates Qualified in NET/SLET/GETE, etc.

During the year 2010-11, a total of 63 students qualified in different competitive examinations. Besides regular teaching and research, the faculty members of this university have taken measures to develop conceptual understanding and examination based specific proficiency to aspirants of various competitive, academic and public examinations. A summary of candidates selected from various departments is tabulated below.

| Department | NET | GATE | State PSC | CJE | Other |
|-------------------------------|----------|----------|-----------|-----------|-----------|
| Life Long Learning education | 1 | 0 | 0 | 0 | 0 |
| Economics | 1 | 0 | 0 | 0 | 16 |
| Geography | 2 | 0 | 0 | 0 | 0 |
| Philosophy | 1 | 0 | 0 | 0 | 3 |
| Library & Information Science | 1 | 0 | 0 | 0 | 1 |
| UIM | 0 | 0 | 0 | 0 | 5 |
| Political Science | 1 | 0 | 0 | 0 | 0 |
| Sanskrit | 0 | 0 | 0 | 0 | 4 |
| Biological Science | 2 | 2 | 0 | 0 | 0 |
| Journalism | 0 | 0 | 1 | 0 | 0 |
| Physics and Electronics | 0 | 2 | 3 | 0 | 10 |
| Law | 0 | 0 | 0 | 10 | 0 |
| Total | 9 | 4 | 4 | 10 | 36 |

7. Initiatives towards Faculty Development Programmes

The University has taken a major initiative for strengthening the infrastructure in departments for teaching, research and training through a number of approved schemes such as the Faculty Development Programs (FDP), Orientation Programme, workshops, etc. This has provided more opportunities to the faculty for their development and up-gradation with the state-of-the-art in learning and teaching. It creates awareness and development of newer ideas among the faculty. Some of the courses organized are as follows.

| Department | Faculty improvement program | Faculty Exchange programme | workshops | Refresher courses | Conferences | Staff training program | Other (Intach) HRD | Total |
|-------------------------|-----------------------------|----------------------------|-----------|-------------------|-------------|------------------------|--------------------|-------|
| AIHCA | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Chemistry | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Geography | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 |
| UIM | 0 | 3 | 3 | 0 | 0 | 0 | 0 | 6 |
| Political Science | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 2 |
| Sanskrit | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 3 |
| Physics and Electronics | 0 | 0 | 0 | 2 | 9 | 0 | 0 | 11 |
| Philosophy | 4 | 2 | 4 | 3 | 0 | 6 | 4 | 23 |
| Physical Education | 0 | 0 | 3 | 2 | 0 | 0 | 0 | 5 |
| Yoga | 2 | 0 | 4 | 1 | 0 | 4 | 3 | 14 |

During the year under review, the UGC Academic Staff College (UGC-ASC) of this university has organized five Orientation Programmes, one Workshop and one Short-term Course for newly appointed assistant professors. Almost every department of the University has hosted programmes for the development of faculties. Most of the programmes were Orientation/Refresher Courses. The UGC-ASC also organized two workshops on Quality Indicators in Higher Education. The subject matter was presented by peers already associated with NAAC accreditation of universities/colleges. The workshops were attended by faculty members of the university and its affiliated colleges.

8. Total number of Seminar/Workshops/Symposia conducted

For the development of the Students, Faculty and other stakeholders, various departments of the university have conducted Seminars, Workshops, Conferences and Symposiums at State or National Level. Philosophy Department leads with three national level seminars/conferences. During the year of 2010-2011, six national, three state level and 13 university, and two college level conferences has been held in the university. The college level workshops were organized for the benefit of degree level students, and were presented with the techniques of electronic media (Journalism), and chromatography (Chemistry). Instrumental demonstration was also in place during these workshops. A great enthusiasm was noticed among the participants of all workshops. The IQAC believes organization of such activities for college level students is a formidable mechanism to attract students in the university teaching departments. Such activities also received appreciation by the society, and suggestions were gathered on exploration of available instrumental facilities in the university to explore new horizons of the knowledge. The summary of the activities conducted by the various departments tabulated as under.

| Department | National | State | University | College |
|------------|----------|-------|------------|---------|
| Economics | 0 | 0 | 1 | 0 |

| | | | | |
|-----------------------|----------|----------|-----------|----------|
| Geography | 1 | 0 | 0 | 0 |
| UIM | 0 | 0 | 3 | 0 |
| Sanskrit | 1 | 0 | 3 | 0 |
| Journalism | 1 | 1 | 2 | 1 |
| Physics & Electronics | 0 | 0 | 1 | 0 |
| Chemistry | | | 1 | 1 |
| Philosophy | 1 | 2 | 2 | 0 |
| Physical Education | 1 | 0 | 0 | 0 |
| Law | 1 | 0 | 0 | 0 |
| Total | 6 | 3 | 13 | 2 |

It is to be noted that the teaching departments have actively organized national/international workshops and seminars for dissemination of knowledge and skills on topics of recent advances in their respective areas. In these workshops, seminars and conferences the researchers have given their invaluable contributions to the current issues of research. It is proposed to further strengthen such activities in years to follow.

9. Research projects, newly implemented and completed

The IQAC considers research as a vital part of education. It involves collective and unique efforts of both the researching students and the faculty involved. University in general and departments in particular provide necessary infrastructural facilities for the success of research programmes. Though, the faculty self-sustained programmes are no less in number, and their output is not inconsiderable, a major trend in the university has always been on amply sponsored research programmes funded by national agencies, and international organizations. Moreover, a number of faculty members have been successful in securing mega research programmes involving exhaustive investigations, added instrumental procurement and collaboration.

A list of projects that have been completed and are on-going is provided below with details on title of activity, funding agency and its outlay. Noteworthy is the total number of Major Research projects being far more in number than the Minor Research Projects during the academic year 2009-10. It was also observed that a majority of funded research project were carried out/being run by the science departments, whereas moderately funded or self-sustained activities credited to departments of arts and humanities. The IQAC has already taken initiatives to stimulate concern for funded activities.

(i) Projects Completed

| | Name of Investigator | Title of the Project | Sponsoring Authority | Outlay Rs. (Lakhs) | Duration |
|---|--|--|----------------------|--------------------|----------|
| 1 | Prof. M. Shrivastava | Univariate and Bivariate Spline Approximation Techniques | DST | 3.60 | 2006-09 |
| 2 | Prof. S.S.Rana and Dr.(Mrs.) M. Dubey | A study of interpolation and shape preserving properties by trigonometric splines. | MP-CST | 4.00 | 2006-09 |
| 3 | Dr. (Mrs.) M. Dubey and Prof. S.S.Rana | A study of interpolation and shape preserving properties by trigonometric splines. | MP-CST | 4.00 | 2006-09 |
| 4 | Prof. J.M. Keller | Nanoscopically manipulated photosensitive polyimide films with graded functionalities for flexible solar cell applications | DRDO | 34.99 | 2006-09 |
| 5 | Dr. Ram Shankar | A Study of Social and Political Attitudes in MP in the Context of general Elections 2009 | UGC | 5.06 | 2008-09 |
| 6 | Dr. P.B. Sengupta | Development on eco-cultural aspects of the Pando Tribes | UGC | 3.00 | 2007-09 |

| | | | | | |
|----------------------------------|------------------|--------------------------|---|--------------|---------|
| 7 | Dr. Sushma Dubey | Crech Monitoring in M.P. | Ministry of Women and Child development | 9.12 | 2007-09 |
| Total Outlay, Rs. (Lakhs) | | | | 63.77 | |

(ii) Projects On-going

| | Name of Investigator | Title of the Project | Sponsoring Authority | Outlay Rs. (Lakhs) | Duration |
|----|----------------------|--|----------------------------------|--------------------|-----------|
| 1 | Dr. A. Sharma | Research on Bacteria and Archaea under taxonomy capacity building. | Min. of Env. & Forest | 28.60 | 2008-12 |
| 2 | Dr. A. Sharma | Investigations on the ecological, clinical & genotypic properties of Non cholera vibrios. | UGC | 11.93 | 2007-10 |
| 3 | Dr. A. Sharma | Assessment of CO ₂ -sequestration potential of bacteria isolated from soil and water bodies around coal mines of M.P. | UGC | 9.13 | 2011-14 |
| 4 | Dr. Y.K. Bansal | In vitro propagation of white ginger (Hedychium coronarium Koenig): An endangered Medicinal plant of Madhya Pradesh | UGC | 6.08 | 2011-14 |
| 5 | Dr. A. Sharma | Assesment of the suitability of bacterial lipases in lieu of chemical detergents | MPCST | 8.61 | 2007-10 |
| 6 | Dr. S.N. Bagchi | Action of bentazone and other post-emergence herbicides on photosystem II structure and in a cyanobacterium, Synechococcus PCC7942 | DST | 20.10 | 2007-10 |
| 7 | Dr. Y.K. Bansal | Studies on <i>in vitro</i> clonal propagation of anti-diabetic tree (<i>Helicteres isora</i>) & evaluation of genetic fidelity through RAPD analysis | MP-BTC | 5.52 | 2007-10 |
| 8 | Dr. A. Sharma | Scientific validation of traditional knowledge with reference to medicinal plants used by tribals against UTI infections | MPCST | 4.68 | 2008-10 |
| 9 | Dr. S.N. Bagchi | Fibrinolytic activity in <i>Anabaena fertilissima</i> : basic studies and clinical efficacy assessment | DBT | 26.10 | 2009-12 |
| 10 | Dr. D. Bagchi | Purification, characterization and regulation of selenate utilizing mutants of wild type <i>Synechococcus PCC 7942</i> | UGC | 7.80 | 2007-10 |
| 11 | Dr. S.S. Sandhu | Microbial Diversity of Mosquito Larvae inhabiting niches and development of Potential Microbes for Management of <i>Aedes aegypti</i> and <i>Anopheles stephensi</i> | DBT | 19.00 | 2008-11 |
| 12 | Dr. S.S. Sandhu | Improvement of <i>Cicer arietinum</i> through Biotechnological Approaches for Development of Disease and Herbicide Resistant Cultivars | UGC | 12.00 | 2008-11 |
| 13 | Dr. A.K. Pandey | Germplasm conservation/ microbial biodiversity preservation. | MP-Biotechnology Council, Bhopal | 22.32 | 2007-2010 |
| 14 | Dr. A.K. Pandey | Management of weeds of leguminous crops employing secondary metabolites of rhizospheric fungi | MPCST | 5.52 | 2007-10 |
| 15 | Prof. R.C. Maurya | Design of Targeting Ligands in Medicinal Inorganic Chemistry: Synthesis, Characterization and 3D-Molecular Modeling of Some Metal Chelates Involving Aminosugar Relevant to Clinical Ecology and Potential Anti-hyperglycemic Agents | CSIR | 15.0 | 2008-11 |
| 16 | Dr. R.P. Mishra | Characterization & purification of laccase from selected aquatic fungi of Jabalpur region | MP-CST | 4.12 | 2010-11 |
| 17 | Prof. K.K. Verma | Screening of chemical agents and their degradation products in water and air: optimization and validation of non-equilibrium liquid phase microextractions | DRDO | 25.0 | 2007-10 |

| | | for trace analysis by HPLC and GC | | | |
|----------------------------------|-------------------------------------|---|--------|---------------|---------|
| 18 | Prof. K.K. Verma | Analytical Chemistry in a Microdrop: Development and Validation of Methods of Sample Preparation for Fibre Optic-linear Array Detection Spectrophotometry, and High Performance Liquid Chromatography-Diode Array Detection | UGC | 10.00 | 2009-11 |
| 19 | Prof. K.K. Mishra | Synergetic effects in the metal ion catalyzed oxidation of sulphur compounds | UGC | 12.00 | 2010-13 |
| 20 | Dr. K.N. Shukla | Advanced level workshop on manuscript and paleography | NMM | 12.00 | 2008-11 |
| 21 | Prof. S.S. Pandey | Wavelet Analysis on Banach Spaces of Functions and Their Applications | DST | 7.12 | 2007-10 |
| 22 | Prof. P.V. Jain and Dr. J.K. Maitra | Generalized concept of Continuity in Topological Spaces and its Applications | UGC | 5.12 | 2007-10 |
| 23 | Dr. B.K. Sahoo/Dr. A.K. Gill | Life-long Learning Education | UGC | 14.25 | 2007-11 |
| 24 | Prof. A.D.N. Bajpai | Skills mapping in M.P. HR linkages | MP-CST | 18.0 | 2010-12 |
| 25 | Prof. P.B. Sengupta | Development of ecoculture in Pando tribe | UGC | 1.0 | 2010-12 |
| Total Outlay, Rs. (Lakhs) | | | | 226.55 | |

10. Patent generated, if any

No patent was generated during the year of the report. With kind assistance of Peers in the field, the IQAC has reviewed the research and technological output of the faculty members, and is happy to record that a number of innovative and advanced inventions were contributed by the faculty who owing to certain constraints, chiefly monetary, and lack of promotion did not attempt to file patents. Their novel findings have all been described in detail in research papers, and the utility of invention is demonstrated by high citation numbers. Nonetheless, the IQAC has plans to promote patent filing of research output.

11. New Collaborative research programmes

A memorandum of understanding (MOU) describing a bilateral or multilateral agreement involving faculty of this university is another area of apprehension for IQAC. It expresses a convergence of will between the parties, indicating an intended common line of action. For the exchange of knowledge and intellectual capacity, various departments of the university entered into collaborations with other departmental or research organizations at national and international level, as well as with industries. These collaborations have enabled to work on a broader platform research and pedagogy that has benefitted the students and faculty in the university, and in turn the participating industries and allied organizations. The collaborative activities organized by various departments are given below.

| Department | Departmental Research Collaboration (National) | Departmental Research Collaboration (International) | Departmental MOU's |
|--------------------|--|---|--------------------|
| Physical Education | 1 | - | - |
| Physics | 10 | 2 | 4 |
| Mathematics | 6 | 2 | - |
| Sanskrit | 1 | - | - |
| Geography | 4 | - | - |
| Bio-Science | 6 | - | - |
| Total | 24 | 3 | 9 |

12. Research grant received from various agencies

Funded research project have been valuable addition to the researchers as well as to the university, and the performance attained reflects the quality of research and development. During the present year of IQAC report, various funding agencies have sponsored the research activities against the proposals submitted as major, minor, SAP and other related projects (Table below).

| Type | On-Going | Completed | Total Outlay, Rs. (Lakhs) |
|----------------------------------|---------------|--------------|---------------------------|
| Minor | 01 | 0 | 1.00 |
| Major | 24 | 07 | 329.32 |
| Total Outlay, Rs. (Lakhs) | 226.55 | 63.77 | 330.32 |

Majority of the research project were granted by the UGC. The same institution granted four Student SciTech grants for various departments of this university. Other granting agencies are DBT, MOEF, MPBC, MPCST, ICSSR and DST.

13. Details of research scholars

A total of one hundred and seventy seven research scholars registered themselves in the university on wide aspects of researches in different departments. The general trend was in favour of Department of Physics and Electronics (20 Research scholars) followed by Sanskrit (18 research scholars), Philosophy (18 research scholars), History (18 research scholars). AIHCA, Bio-Science, Life-long Learning Education, Geography, Political Science, Journalism, Law, Mathematics Management, Computer Science, History, Economics and Physical Education also have reasonable number of students. Such departments have 2-12 students each.

The Table below shows the spread of research scholars registered during the academic year 2010-11.

| Department | Registered Research Scholars |
|------------------------------|------------------------------|
| AIHCA | 6 |
| Life-long Learning Education | 2 |
| Economics | 9 |
| Chemistry | 8 |
| Geography | 12 |
| Political Science | 8 |
| Sanskrit | 18 |
| Biological Science | 12 |
| Journalism | 1 |
| Physics and Electronics | 20 |
| Philosophy | 18 |
| Physical Education | 10 |
| Law | 6 |
| Mathematics | 10 |
| History | 18 |
| Computer Science | 6 |
| Total | 164 |

14. Citation index of faculty members and impact factor

A list of research papers published by faculty members during 2010-11 is presented in the end of this report. Though the list is not comprehensive, it evinces the activities undertaken and the reputation of journals that were selected for publication. It is planned to provide full list of publication in the self-study report for the next accreditation. In the table below, the review of available data on certain departments is summarized.

| Department | Nature of Publications | | | | | Impact Factor | | | |
|-------------------------|------------------------|---------------|----------|---------------|------------------------|---------------|------|---------|---------------|
| | Books (with ISSN) | Book Chapters | National | International | Conference Proceedings | Range | Avg. | h-Index | No. in Scopus |
| AIHCA | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 |
| Economics | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chemistry | 0 | 0 | 0 | 1 | 12 | 1 | 1 | 12 | 80 |
| Geography | 3 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 |
| UIM | 4 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Political Science | 0 | 0 | 19 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sanskrit | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Biological Science | 0 | 0 | 33 | 20 | 2 | 0-3.06 | 1.5 | 0 | 0 |
| Physics and Electronics | 0 | 1 | 3 | 18 | 9 | 2-3 | 2 | 6 | 20 |
| Philosophy | 0 | 0 | 8 | 5 | 16 | 0 | 0 | 0 | 0 |
| Physical Education | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Law | 1 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mathematics | 0 | 0 | 4 | 11 | 0 | 1-6 | 1.8 | 1.46 | 0 |
| Computer Science | 0 | 0 | 0 | 3 | 0 | 0.5-1.4 | 0.95 | 0 | 0 |
| History | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |

15. Honours/awards to faculty

The faculty members of various departments have achieved following awards during the academic year 2010-11. The faculty has won a total number of eight awards including one state and seven national awards. Besides, faculty members have been invited by national/international journals of repute for reviewing the submitted research papers for publication. As a token of appreciation by the publishers, the reviewers have been provided access to data search engines and full text of articles.

16. Internal resources generated

As per the table below, various departments have generated following grants from their self-financing programmes during 2010-11. Department of Law has received the highest amount for self-financing program during the year, and the Department of Biological Science followed the trend. It is also evident from the table that other Departments also received reasonable grants for their SF programs. These funds generated were utilized to strengthen the infrastructural facilities in the departments.

| Departments | Income from SF Programmes Rs. (Lakhs) |
|-----------------|--|
| Bio-Science | 84.85 |
| Computer Centre | 1.41 |

| | |
|------------------------------------|---------------|
| Journalism | 9.71 |
| Computer Science (Maths) | 32.42 |
| Life-long Learning Edu. | 2.65 |
| Law | 90.91 |
| Education | 61.53 |
| Sociology | 24.88 |
| Yoga Centre | 4.85 |
| Library and Information Science | 6.84 |
| M.C.A. | 82.30 |
| University Institute of Management | 50.58 |
| Physical Education | 42.61 |
| Physical Education Development | 19.88 |
| Women Study Centre | 0.13 |
| Economics | 18.36 |
| Physics | 3.05 |
| Total, Rs. (Lakhs) | 536.96 |

17. Details of Departments getting SAP, COSIST (ASSIST)/DST.FIST, etc., assistance/recognition

During the year 2010-11, only Department of Mathematics received grants under UGC-SAP. Formerly, some of other departments were also supported by the UGC under FIST programme, and Department of Biological Science, and Department of Chemistry. Further applications to secure such supports could not be made by certain departments in view of less than required number of regular faculty members. The IQAC has reacted with utmost concern over this issue, and appealed to the university for promptly filling the vacant academic positions in the university. Grants received from UGC and other agencies are as under. During the same year, M.P. Government provided grant of Rs. 59.04 lakh as scholarship for SC/ST/OBC students, and 39 lakh as Rajeev Gandhi National Fellowship.

18. Community services

During the year 2010-11, the teaching Departments of Rani Durgavati University organized activities for the welfare of students especially from weaker section of the society. Programmes were also in place for the campus development and its maintenance. Such activities involved faculties, students and other staff of the university. Tabulated below is a succinct account of contributions made by various departments for society. The responsibility distribution among the departments was kept the same as in previous year.

| Name of the Department | Contribution |
|------------------------|---|
| Biological Science | <ul style="list-style-type: none"> • Counselling and group discussion on environmental awareness. • Concern and effective measures for biological pollution. • Monitoring of Narmada river water for occurrence of certain chemicals and bacteria. |
| Chemistry | <ul style="list-style-type: none"> • Development of analytical methodologies for pesticides and industrial chemicals in the water bodies. • Monitoring of Narmada river water for pesticides. • Monitoring of toxic metals in soil and water. |
| Economics | <ul style="list-style-type: none"> • Economic survey. • Market sussing. |

| | |
|---------------------------------|---|
| | <ul style="list-style-type: none"> • Polythene free zone, and aesthetic practices in the campus. |
| Education | <ul style="list-style-type: none"> • Survey of local schools with respect to standard of teaching. • Development of teaching programmes for schools. • Studies on adoption of virtual classes. |
| Geography | <ul style="list-style-type: none"> • Studies based on land and water bodies. • Plantation and other activities on campus maintenance. |
| Hindi | <ul style="list-style-type: none"> • Use of Language lab especially for students of weaker sections of the society. |
| Journalism | <ul style="list-style-type: none"> • Students attend lectures and seminars on environment. |
| Law | <ul style="list-style-type: none"> • Awareness for human rights, and prevention of gender harassment. • Law makers view point for environmental pollution. |
| Mathematics | <ul style="list-style-type: none"> • Popularization of mathematical skills among school children. • Awareness about Vedic mathematics, and its use. |
| Political Science | <ul style="list-style-type: none"> • Awareness on political systems. |
| Physics and Electronics | <ul style="list-style-type: none"> • Support services for development of minor equipments. • Areas for use of luminescence as alternative to electricity. |
| Philosophy | <ul style="list-style-type: none"> • Popularization of ethical practices in society. • Social measures for gender harassment. |
| Physical Education | <ul style="list-style-type: none"> • Support services to growing children on sports. • Sports as means for mutual understanding, and inculcation of moral values. |
| University Institute Management | <ul style="list-style-type: none"> • Awareness about management skills in routine matters. • Management measures on prevention of gender harassment. |
| UICSA | <ul style="list-style-type: none"> • Computational skills enhancement programmes. • Computer applications in routine matters. |
| Sanskrit | <ul style="list-style-type: none"> • Holistic aptitude and religious concerns for environmental protection. • Religious view point on gender discrimination and harassment. |

19. Teachers and officers newly recruited

Unfortunately, no recruitment of teachers and officers was done during the year of report. The IQAC has shown its concern for declining number of teaching faculty in various departments.

20. Teaching/Non-teaching staff ratio

During the year 2010-11, the number of teaching staff and non-teaching staff was respectively 60 and 572. Teaching and non-teaching staff ratio was about 1:9.

21. Improvement in the library Services

Constant efforts have been made by the Central Library of the University to update the existing software of the library to improve the transaction services rendered to the student and faculty. At the same time initiation of the automation of the library was started. Since the adequate functioning of Central Library is based on conscience of the authorities and users, awareness has been developed for maintenance and updating of library, catering to the needs of readers, and in establishing a direct dialogue between the library authorities and users in procurement of titles of specific choice.

22. New books and journals subscribed and their value

During the year 2009-2010, a total of 1074 text titles, 35 reference books, 2 e-journals, and 1 digital data base related to academics have been procured in the library. Teaching departments also maintain an exclusive library for the use of departmental students. Thus, books procurement has also been done in behalf of teaching departments of the university. The purchases were made from the self-finance budget of departments, and had a total cost of about 4 lakhs. In the same year the Central Library of the University procured about 3000 text books worth Rs. 36 lakhs.

23. Course in which student assessment of teachers is introduced and the action taken on student feedback

In all departments, students and feedback of teachers is taken on regular bases. The feedbacks so collected are compiled and analyzed for necessary follow up. The head of department then shares the relevant discrepancies and weaknesses on individual basis in friendly manner for quality improved.

24. Unit cost of education

Total number of students in teaching departments of the university is 1078 in the year 2009-10. University has about 240 affiliated colleges. The total fee received is Rs. 257.59 lakhs. Expenditure incurred on salary of teachers is Rs. 5 crore and on contingencies about Rs. 20 lakhs. The Unit cost of education comes about Rs. 0.24 Lakh.

25. Computerization of administration and the process of admissions and exam results, issue of certificates

The university has taken measures on computerization of administrative processes and on students' admission to various courses. Equal attention is paid to examination results processing and their publication. Some of these activities are mentioned below.

- On line process of admission has been introduced.
- Publication of online results is being done on a regular basis.
- Negotiations are being made with the bank for on line deposit of various types of fees and dues.
- Operation of accounting services through TALLY.
- Accounts section has been fully computerized.

26. Increase in infrastructural facilities

A large sum of money has been spent for the development of its infrastructure during 2009-2011 for the benefit of its stakeholders. Some examples are mentioned below,

| Department | Campus area | Class rooms | Laboratories/ Library | Seminar Halls | Equipment | Value of Equipment Rs. Lakh | Source of funding | Others, Rs. Lakh | Total Rs. (Lakhs) |
|------------------------------|--------------|-------------|--------------------------|---------------|-----------|-----------------------------------|--------------------------------------|---------------------|----------------------|
| Life Long Learning education | 210 sq. m. | 2* 2# | 1* | - | - | - | - | - | - |
| Chemistry | 4000 sq. m. | 3* | 4* | 3* | 10 | 225 | DST, UGC, CSIR, DRDO, European Union | - | 225 |
| Geography | 5200 sq. ft. | 3* | 1* | 1* | 3* | - | - | - | - |
| Library & Information | 1500 sq. ft. | 2* | 1* | - | - | - | - | - | - |

| | | | | | | | | | |
|-------------------------|--------------|----------|----------|----------|-----|------------------|---|------|--------|
| Science | | | | | | | | | |
| UIM | 2 Acre | 4* | 2* | 4* | - | - | University | - | - |
| Political Science | --- | 2* | | 1* | - | - | - | - | - |
| Sanskrit | - | 4* 1# | 1* | 1* 1# | - | - | - | | - |
| Biological Science | 6478 sq. m | 10* | 13* | 2* | 45 | 670 | DBT, UGC, DST, MoEF, MP-CST | - | 670 |
| Journalism | 2400 sq. ft. | 2* | 1* | 1* | -- | - | - | - | - |
| Physics and Electronics | - | - | - | - | 1# | 115.35 | UGC | - | 115.35 |
| Physical Education | - | 3* | 3* | - | 7# | 14.75* 50.85# | Physical welfare Fee, and Dept Develop. fee | 0.69 | 65.61 |
| Yoga | - | 4* | 1* | 1* | - | - | - | - | - |
| Law | - | 7* | -- | 1* | - | - | SF | - | - |
| Mathematics | 1.5 Acre | 6* | 1* 1# | 2* | UPS | Slide Projector | UGC; University Fund | - | - |
| English | - | 2* | --- | 1* | - | - | - | - | - |
| History | - | 2* | 1* | - | - | - | - | - | - |
| Education | - | 3* | 1* | 1* | - | 0.67 | University | - | 0.67 |

*Existing, # newly added.

New buildings with modern amenities have been constructed with a total cost of about Rs. 1 crore, and made available for housing teaching departments such as life-long learning education, journalism and mass communication, and Education.

27. Technology up-gradation

Rani Durgavati University has up-graded the technologies during 2009-2011 by initiating computer centers, computer labs, internet facilities, and browsing centers for the benefit of students, faculties and researchers.

Summary of technology up-gradation by the various Departments are shown in the following table.

| Department | Total Computers | Computer Labs | Internet | Browsing Centers | Computer Centre | Office |
|------------------------------|-----------------|---------------|----------|------------------|-----------------|--------|
| AIHCA | 1* | 0 | Yes | 0 | 0 | 0 |
| Life Long Learning education | 10* | 1* | yes | 0 | 0 | 0 |
| Economics | 0 | 0 | 1* 2# | 0 | 0 | 0 |
| Chemistry | 20* | 1* | Yes | 0 | 0 | 0 |
| Geography | 3* | 1* | 3* | 3* | 1* | 1* |
| UIM | 60* | 1* | 1* | 1* | 1* | 2* |
| Sanskrit | 2* | 1* | 1# | 1# | 0 | 1* |
| Biological Science | 30* | 1* | 1* | 1* | 1* | 1* |
| Journalism | 14* | 1* | 12* | 1* | 0 | 2* |
| Physics and Electronics | 20* | 1* | Yes | 11* 1# | 0 | 0 |
| Philosophy | 2* | 1* | 1* | - | 0 | 0 |
| Physical Education | 4* | - | Yes | Yes | 0 | 0 |
| Yoga | 1* | 1* | 0 | 0 | 0 | 1* |
| Law | 3 | 0 | 0 | 0 | 1 | 0 |
| Mathematics | 20* 20# | 1* 1# | 1* 1# | 0 | 1* | 0 |

| | | | | | | |
|-----------|-----------|----|---------------|----|----|----|
| English | 3* | 0 | 0 | 0 | 0 | 3* |
| UICSA | 25* 5# | 1* | Broadband (1) | 1* | 1* | 1* |
| History | 4* | 0 | 3* | 0 | 0 | - |
| Education | 1* 1# | 0 | 0 | 0 | 1* | 1* |

*Existing, # newly added.

All teaching departments of the university have witnessed growth in computational and internet facilities. Most departments have upgraded facilities vis-à-vis introduction of new versions of softwares, and computer peripherals. Such advancement has been brought in the departments of Economics, Sanskrit and Education. Department of Mathematics has added 20 new computers, 1 computer Laboratory and a few more internet facilities.

28. Computer and internet access and training to teachers and students

Most of the department of the University have adopted computer and internet access, and demonstrated effective training in these areas for teachers and students. Technology up-gradation, as briefly depicted in the table of previous paragraph, has also been a major activity. In terms of both knowledge acquisition and skill development through academic programmes, it was experienced that teachers training in the use and application of technology are the key determining factor for improved performance students. The IQAC believes that the educational technology is by no means transformative on its own unless it involves dedicated and prepared teachers. Thus, basic elements of computer technology and its applications have been integrated in subjects' curriculum where it was previously not thought as a necessary element.

| Department | Access to Internet |
|-------------------------------|--------------------|
| AIHCA | Yes |
| Biological Science | Yes |
| Chemistry | Yes |
| Economics | Yes |
| English | Yes |
| Education (B.Ed.) | Yes |
| History | Yes |
| Geography | Yes |
| Journalism | Yes |
| Law | Yes |
| Life Long Learning education | Yes |
| Library & Information Science | Yes |
| Mathematics | Yes |
| Political Science | Yes |
| Physics and Electronics | Yes |
| Philosophy | Yes |
| Physical Education | Yes |
| Sanskrit | Yes |
| Tribal Studies | No |
| UIM | Yes |
| UICSA | Yes |
| Yoga | Yes |

29. Financial aid to students

Rani Durgavati University extended the support to students by providing financial assistance through endowment, free-ship and scholarship by government, and scholarship by the institution and other support services. Some examples are illustrated below.

| Department | Financial support from government | | No. of students who received international/National recognitions | |
|-------------------------|-----------------------------------|-------------------------------|--|--------------------|
| | No. of students | Amount (Rs.) | No. of students | Amount, Rs |
| AIHCA | 6 | 13,200 | - | - |
| Economics | 5 | UGC | | |
| Chemistry | As JRF | As per norm of funding agency | - | - |
| UIM | 35 (ST/SC) | - | - | - |
| Sanskrit | 14 | - | 3 | 3,18,000 |
| Biological Science | 40 | 9,00,000 | 3 | 5,76,000 |
| Journalism | - | - | 10 | As per govt. norms |
| Physics and Electronics | 7 | 30,000 | - | - |
| Law | SC/ST | Tuition Fees | -- | |
| Mathematics | 1 | 10,000 | - | - |
| UICSA | 21 | 5,05,050 | - | - |
| History | 11 | 68,200 | - | - |
| Education | 36 (ST/SC) | 9,39,600* | - | - |

With the help of IQAC, the departments have developed a mechanism of assisting students in presenting their case for national support through diverse scholarship schemes. The circulars of such agencies are brought to the notice of students directly by the office of Students' Welfare Dean.

30. Activities and support from the Alumni Association

The university has an active Alumni Association comprises of faculty members, research scholars and students who were previously on roll in any of said positions. Frequent meetings of alumni association are called at the level of departments and the university. The alumni themselves also organize events where they share their views and extend support to their *Alma mater*.

The activities of Alumni Associations are as follows:

- Sharing achievements with growing students through meetings and informally.
- Advising authorities and concerned faculty about up coming courses.
- Participation on case studies of successful personalities in workshops.
- Participation and contribution to institutional conferences, seminars, workshops, etc.

A brief summary of activities and support from the Alumni Association during the year 2009-2011 is given in following Table.

| Department | Alumni Association Activities and support |
|------------|---|
|------------|---|

| | |
|--------------------|---|
| Geography | RDVV, Alumni Association Meet |
| UIM | Organized lectures on placement of the student |
| Political Science | Meetings with Alumni |
| Biological Science | Meeting of Alumni placed at various National & international organization, and extended assistance in placement of the students and research scholars |
| Journalism | Alumni Association supported the student of the department |
| Education | Alumni feedback on current trends in education |

During the year 2010-11, Alumni Associations of certain departments extended their support to students on placement services.

The Alumni are encouraged to make full use of social net working web sites in developing exclusive web pages, micro blogging, and feedback mechanisms to facilitate exchange of information, job prospects and opportunity harvesting.

31. Activities and support from the Parent-Teacher Association

Departments have been asked to obtain feedback from parents of registered students in different programmes of 2010-11, and to develop mechanisms for a regular interaction with concerned faculty members. A number of departments supported the Parent-Teachers Association, and include departments of Geography, Political Science, Journalism, Law, and Education. The IQAC has stressed need for parent-teacher meetings, at least once in a semester, in all departments.

32. Health Services

The University has a well developed Health Center that has a full time qualified allopathic Doctor and supporting staff from the university to provide on campus services to students, employees and teachers. The Center is strategically located at arms distance to the university boys and girls hostels. The health center provides primary health care including hospitalization, distribution of medicines, ECG and other diagnostic services, etc. In addition to regular health care activities, university has also organized health camps by Endocrinologists, Dentists, Dieticians and practitioners of Ayurveda and Homeopathy therapies.

33. Performance in sports activities

During the year 2010-11, students from certain Departments participated in sports activities. Two students each participated at State and National Level from the Department of Biological Science; 28 students participated at State/University Level, 10 students participated at National Level from Department of Physical Education and 2/1 students from Mathematics in the two event levels.

| Department | No. of student participated | |
|--------------------|-----------------------------|----------------|
| | State/University Level | National Level |
| Biological Science | 2 | 2 |
| Physical Education | 39 | 6 |
| Education | 2 | 2 |

34. Incentives to outstanding sportspersons

During 2009-2010, one student from the Department of Physical Education was adjudged outstanding sports persons, and presented with 2 National level awards, and one student of University Institute of Management was presented with 1 MP State level award.

| Department | No. of medals and awards | | |
|--------------------|--------------------------|----------------|------------|
| | State/University Level | National Level | Incentives |
| Physical Education | - | | Rs. 67,000 |

35. Students achievements and awards

Student research fellowships and awards presented in 2010-11 are summarized in the following Table.

| Department | Achievements and Awards | |
|------------------------------|--|--|
| | No. of research scholar receiving the fellowship | No. of award/medal won by student in cultural events |
| Life-long Learning education | 1 | - |
| Economics | 5 | - |
| Chemistry | 2 | - |
| Geography | 15 | - |
| Political Science | 1 | - |
| Sanskrit | 3 | 4 |
| Biological Science | 13 | - |
| Physics and Electronics | Yes | - |
| Philosophy | 4 | - |
| History | 2 | - |

36. Activities of the Guidance and Counselling unit

Career guidance and counseling programmes run in the university have been effective in developing students' competence and personality, educational and occupational exploration, and career planning. It is a voluntary comprehensive programme. During 2010-11, a number of students were benefited by the Counseling and Career Guidance involving participation of various Departments (Table below). The responsibility of departments was kept the same as in previous year.

| Department | Student Counseling and Career guidance | No. of student benefited |
|-------------------------------|--|--------------------------|
| AIHCA | Archaeological explorations and ancient history. | 2 |
| Economics | Economic surveys. | 18 |
| Chemistry | Pharma industries and employment prospects. | 8 |
| Geography | Counseling to appear in various exams and private sector jobs. | 7 |
| Library & Information Science | Information for various vacant posts at different colleges. | 1 |
| UIM | Organizational management. | 20 |

| | | |
|-------------------------|--|------------|
| Sanskrit | Group discussion for students. | 30 |
| Biological Science | Regular counseling sessions | 60 |
| Journalism | Print and electronic media services. | 40 |
| Physics and Electronics | Nano-technology and job prospects. | 10 |
| Philosophy | Personality development. | 5 |
| Physical Education | Counseling on job selections. | 12 |
| Yoga | Office productivity through yoga. | 30 |
| Law | Self employment and law practice. | 75 |
| Mathematics | Computational skills for placement. | 20 |
| History | Documentation in electronic media. | 5 |
| Education | Positions available in Local Schools-Teachers liaison for prospective jobs | 6 |
| Total | | 349 |

37. Placement services provided to students

Vocational placement services have been helpful to students to enter into appropriate jobs. Students are provided with job-information by special bulletins, audio-visual-aids and publication of handbooks detailing job opportunities. In the following Table available data on students' placement are mentioned. The IQAC plans to publish annually a brochure on curriculum vitae and other details of students who are in final semester of postgraduate classes, and give it a wide circulation among industries and other organizations.

| Department | On Campus | | | Off Campus |
|-------------------------|-----------------------------|------------------------------|------------------------|------------------------|
| | No. of organization visited | No. of students participated | No. of students placed | No. of students placed |
| Economics | - | - | - | 16 |
| UIM | 4 | 25 | 5 | 20 |
| Journalism | - | 18 | 12 | 3 |
| Physics and Electronics | - | - | - | 8 |
| Physical Education | - | - | - | 21 |
| Education | - | - | - | 15 |

38. Development programs for non-teaching staff

During the year under assessment report, certain departments developed programs for the welfare of non-teaching staff of the university. To share common problems related with office work performance and computer application abilities, Departments of UIM, Geography and History organized programmes on chosen subjects for non-teaching staff. Department of Economics helped on accounts keeping.

| Name of the Department | Welfare Schemes for Non-Teaching Staff |
|------------------------|---|
| History | File keeping and on-line services |
| UIM | Office management |
| Geography | Computer applications (Word processing and Excel) |
| Economics | Accounts keeping, TALLY software application |

39. Healthy practices of the institution

Following healthy practices have been maintained in the university.

(i) Best practices in curricular aspects

- At the end of each semester feedback of students and teachers were obtained on suitability of courses, and on further additions/deletions.
- Practical exercises in science subjects were modified/substituted with attention to green practices.
- Summer training and job training have been incorporated in various courses as additional activities.
- The Institution-Industry Interaction has been made operative by subjecting students to such options in the curriculum.

(ii) Best practices in teaching-learning and evaluation

- Mandatory Comprehensive Continuation Evaluation (CCE) in each subject and semester.
- Teachers' appraisal by students at regular interval.
- Use of modern teaching aids, and virtual classes.

(iii) Best practices in Research, consultancy and extension

- Organization of 3-days long science meets every year to mark the National Science Day.
- Invited lectures of distinguished personalities and subject experts.
- *Vislesan (The Analysis)* a research Journal of university published separately for Science and Arts/Humanities.
- *Sampreshan* a monthly newsletter published by the Department of Journalism and Mass Communication. It provides a rare opportunity to students of the department to act as editor, correspondent and interviewer.
- Conducting centre on Women Study Development and Research especially for tribal and rural women folk. It also promotes inter disciplinary research on issues pertaining to women.
- Organization of young scientist meets under the assistance of MP Council of Science and Technology, Bhopal, and using our own resources.

(iv) Best practices in development of Infrastructure and Learning Resources

- Procurement of new and advanced instruments for research.
- Regular training of students and research scholars on instrumental use by organization of workshops.
- The university has evolved the practice of participation of students and staff in maintenance of cleanliness of infrastructure.
- The students are encouraged to participate in the environment management programmes.

(v) Best practices in student support and progression

- The University has constituted *Durgavati Award* to honour the mother of a meritorious girl student hailing from tribal region.
- Incentive to meritorious students belonging to the low income group by Pandit Kunjilal Dubey award.
- Remedial coaching to students belonging to SC/ST/OBC. It also provides special coaching classes to physically challenged students, and those from low income families.
- Career Counselling and Development Centres for vocational and competitive examinations.

(vi) Best practices in governance and leadership

- All the matters related to academic and administrative placed within the purview of Academic Staff Council established in each departmental.
- Coordination Committees for teaching and non-teaching employees of the university.
- Students' grievance redressal cell in each department. Similar facility available with the office of students' welfare dean.

The responsibility of departments remained the same as in previous year. This was necessary in view of utilization of knowledge and experience of faculty.

| Department | Initiative undertaken |
|--------------------|---|
| Geography | <ul style="list-style-type: none"> • Study of campus topology. Construction of sump dam. • Rain water harvesting. |
| UIM | <ul style="list-style-type: none"> • Assistance to administration on office management. • On-campus placement services. |
| Political Science | <ul style="list-style-type: none"> • Human rights awareness programmes in the campus. |
| Biological Science | <ul style="list-style-type: none"> • Know-how and remedies on plant diseases. Pest control in the campus. • Eradication of harmful weeds and plants from the campus by biological means. • Botanical garden with medicinal plants. • Biological pollution in campus. Safe disposal of biological waste. |
| Journalism | <ul style="list-style-type: none"> • Electronic media training and awareness programmes. • Publication of tabloids/e-journals covering national/social issues. |
| Philosophy | <ul style="list-style-type: none"> • Interactive programmes on ethical issues in the society. |
| Physical Education | <ul style="list-style-type: none"> • Promotion of sports activities among school children. • Awareness programmes on health issues. • Awareness programmes on drug addiction, and remedies. • Self-protection workshops for children and women. |
| Law | <ul style="list-style-type: none"> • Awareness programmes on legal issues on gender harassment, rape and social discrimination. • University students and law practitioners interactions. • Awareness programmes on legal issues in academia. |
| Mathematics | <ul style="list-style-type: none"> • Promotion of mathematical skill among school children. • Organization of mathematical quiz programmes. |
| English | <ul style="list-style-type: none"> • Training programmes on spoken English. • English writing skills. • Training programmes on phonetics in English. |
| UICSA | <ul style="list-style-type: none"> • Training programmes/workshops on computer applications. • Awareness programmes on professional computer softwares. |
| Education | <ul style="list-style-type: none"> • Awareness programmes on waste disposal management. • Informative programmes on ethnic art work. • Workshops on ill-literacy and combating mechanisms. |
| Chemistry | <ul style="list-style-type: none"> • Awareness programmes on air and water pollution. • Safe disposal of chemicals. • Adoption of green technologies in laboratories, and offices. • Chemical monitoring of soil and water bodies in the campus. |

40. Linkages developed with National/International academic/research bodies

A number of Departments developed research linkages with national and international organizations, including universities/institutes. Department of Physics and Electronics, Mathematics, UIM, Department of Biological Science and Political Science established research collaborations. The Law department continued

teaching cooperation with the National Institute of Law, Bhopal, and set-up collaboration with Indian Institute of Public Administration, New Delhi.

41. Any other relevant information the institution wishes to add

(i) Innovative Initiatives taken by certain Departments

Summary of innovative process adopted by the various Departments in teaching and learning are given below.

| Department | Innovative process adopted by the institution in teaching and learning |
|-------------------------------|--|
| Economics | Power point presentation skills. |
| Chemistry | Awareness programmes on chemical pollution, safety and abatement. |
| Library & Information Science | Workshops on on-line services in library. |
| UIM | Interactive workshops on thematic management issues. |
| Political Science | Dialogical concepts in teaching and research. |
| Sanskrit | Workshops on spoken Sanskrit. Organization of plays in Sanskrit. |
| Biological Science | Study on biodiversity in the campus. Development of medicinal plants garden. |
| Journalism | Training on conduction of personal interviews for electronic media. |
| Philosophy | Organization of sessions on meditation. |
| Law | Moot courts and case studies. |
| Mathematics | Computational skills development for research. |
| Education | Lesson/teaching programmes involving pupil teachers. Poster sessions organization. |

(ii) Other information

- The University maintains a crèche (*Palna Ghar*) for children of the working women. It is maintained by the Director, Women Study Development and Research Centre, and provides the play, sleeping, feeding facilities under hygienic environment.
- The University has zero tolerance to ragging. It operates through committees at the central and departmental levels.
- The University sensitizes its faculty and students to avoid plagiarism in research work and publications.
- The University has *Anti-Sexual Harassment Cell* for safety of women employees and students. It also encourages a healthy and congenial environment to the women.

(iii) Research Publications (2010-11)

- Patel, A.K., Bajpai, R., Keller, J.M., Saha, A., Preparation and characterization of palm leaf incorporated polyvinyl alcohol bio composites, (2011) *AIP Conference Proceedings*, 1393, pp. 151-152.
- Tamsikar, J., Singh, S.M., Naidu, J., Prevalence of non-albicans Candida vaginitis in patients on hormonal treatment in Jabalpur, Central India, (2011) *Journal de Mycologie Medicale*, 21 (4), pp. 256-259.
- D'souza, R., Keller, J.M., Das, K., Charge transport parameter of iodine-PMMA composites, (2011) *Proceedings - International Symposium on Electrets*, art. no. 6085001, pp. 99-100.
- Patel, A.K., Bajpai, R., Keller, J.M., Kumari, B., Vatsal, V., Saha, A., Structural, morphological and micromechanical studies on fly ash reinforced PMMA composites, (2011) *Microsystem Technologies*, 17 (12), pp. 1755-1762.
- D'souza, R., Keller, J.M., Das, K., Optical properties of iodine-PMMA composites, (2011) *Proceedings - International Symposium on Electrets*, art. no. 6085046, pp. 189-190.

6. Nawange, S.R., Singh, S.M., Naidu, J., Sethi, R., Jain, R.Y., Tiwari, A., Singh, K., Serotype distribution of *Cryptococcus Neoformans* and *Cryptococcus Gattii* in patients and in the environment of Jabalpur, a City of Madhya Pradesh in India, (2011) *Asian Journal of Microbiology, Biotechnology and Environmental Sciences*, 13 (4), pp. 735-742.
7. Kanojia, A., Kaur, J., Suryanarayana, N.S., Dubey, V., Study of thickness effect on absorption, Photo and electroluminescence spectra in roppv polymer films, (2011) *Materials Physics and Mechanics*, 12 (2), pp. 103-112.
8. Quereshi, S., Khan, N.A., Pandey, A.K., Anthraquinone pigment with herbicidal potential from *Phoma herbarum* FGCC#54, (2011) *Chemistry of Natural Compounds*, 47 (4), pp. 521-523.
9. Jain, A., Verma, K.K., Recent advances in applications of single-drop microextraction: A review, (2011) *Analytica Chimica Acta*, 706 (1), pp. 37-65.
10. Tiwari, A., Gupta, A.K., Bajpai, R., Keller, J.M. Open circuit thermally stimulated discharge current measurement on PMMA:PEMA:PVDF ternary blends, (2011) *Indian Journal of Physics*, 85 (11), pp. 1581-
11. Bagchi, S.N., Ghosh, S.K., Partial Purification and Characterization of an Elastase-inhibitory Lipid Derivative from a Cyanobacterium, *Microcystis* Ku2, (2011) *Indian Journal of Microbiology*, 51 (4), pp. 496-500.
12. Khan, N.A., Two antifungal active triterpenoid saponins from the seeds of *Lathyrus* plants, (2011) *Natural Product Research*, 25 (18), pp. 1687-1694.
13. Sahay, H., Singh, S., Kaushik, R., Saxena, A.K., Arora, D.K., Characterization of halophilic bacteria from environmental samples from the brackish water of Pulicat Lake, India, (2011) *Biologia*, 66 (5), pp. 741-747.
14. Upadhyay, M.K., Kumar, A., Pandey, A.K., Optimization for production of fungal amylase enzyme isolated from *Penicillium chrysogenum* (FGC/JNU201) in solid state fermentation, (2011) *Asian Journal of*
15. Deshpande, D.S., Bajpai, R., Bajpai, A.K., On the development of thermally stable semi-IPNs of PVA and PAN using IR, DSC and XRD studies, (2011) *AIP Conference Proceedings*, 1349 (PART A), pp. 180-181.
16. Mishra, P.K., Mishra, J., Khare, P.K., Study of steady state conduction of pure and malachite green doped polyvinyl carbazole samples, (2011) *AIP Conference Proceedings*, 1349 (PART A), pp. 757-758.
17. Mishra, J., Mishra, P.K., Khare, P.K., Study of characterization of pure and malachite green doped samples using spectroscopic studies, (2011) *AIP Conference Proceedings*, 1349 (PART A), pp. 561-562.
18. Singh, S., Das, S., Screening, production, optimization and characterization of cyanobacterial polysaccharide, (2011) *World Journal of Microbiology and Biotechnology*, 27 (9), pp. 1971-1980.
19. Dubey, Y.P., Best error bounds for splines of degree six, (2011) *International Journal of Mathematical Analysis*, 5 (21-24), pp. 1201-1209.
20. Chaitanya, P., Thakur, O.P., Kumar, V., Shukla, A., Pandey, L., Equivalent circuit model of a PbZr 0.6Ti 0.4O 3 ceramic using impedance spectroscopy, (2011) *Journal of Ceramic Processing Research*, 12 (3), pp. 247-258.
21. Aloney, R., Chandra, P.R., Ramrakhaini, M., Effect of current density on PEC solar cell, (2011) *Journal of Optoelectronics and Advanced Materials*, 13 (7), pp. 830-832.
22. Hasan, S., Singh, R.I., Singh, S.S., Development of Transformation System of *Verticillium lecanii* (*Lecanicillium* spp.) (Deuteromycotina: Hyphomycetes) Based on Nitrate Reductase Gene of *Aspergillus nidulans*, (2011) *Indian Journal of Microbiology*, 51 (3), pp. 390-395.
23. Singh, A.K., Jamaluddin, Effect of arbuscular mycorrhizal inoculation on phosphatase activity in the rhizosphere of *Jatropha curcas* in calcareous mined spoil, (2011) *National Academy Science Letters*, 34 (1-2), pp. 27-29.

24. Maurya, R.C., Bohre, P., Sahu, S., Martin, M.H., Sharma, A.K., Vishwakarma, P., Oxoperoxomolybdenum(VI) complexes of catalytic and biomedical relevance: Synthesis, characterization, antibacterial activity and 3D-molecular modeling of some oxoperoxomolybdenum(VI) chelates in mixed (O,O) coordination environment involving maltol and β -diketoenolates, (2011) *Arabian Journal of Chemistry*, in press.
25. Sharma, A., Bhattacharya, A., Shrivastava, A., Biomimetic CO₂ sequestration using purified carbonic anhydrase from indigenous bacterial strains immobilized on biopolymeric materials, (2011) *Enzyme and Microbial Technology*, 48 (4-5), pp. 416-426.
26. Singh, S., Datta, P., Tirkey, A., Response of multiple herbicide resistant strain of diazotrophic cyanobacterium, *Anabaena variabilis*, exposed to atrazine and DCMU, (2011) *Indian Journal of Experimental Biology*, 49 (4), pp. 298-303.
27. Sharma, N., Jain, A., Verma, K.K., Headspace solid-phase microextraction and on-fibre derivatization of primary aromatic amines for their determination by pyrolysis to aryl isothiocyanates and gas chromatography-mass spectrometry, (2011) *Analytical Methods*, 3 (4), pp. 970-976.
28. Prabhu, C., Wanjari, S., Puri, A., Bhattacharya, A., Pujari, R., Yadav, R., Das, S., Labhsetwar, N., Sharma, A., Satyanarayanan, T., Rayalu, S., Region-specific bacterial carbonic anhydrase for biomimetic sequestration of carbon dioxide, (2011) *Energy and Fuels*, 25 (3), pp. 1327-1332.
29. Maurya, R.C., Bohre, P., Sahu, S., Martin, M.H., Sharma, A.K., Manganese(II) chelates of bioinorganic and medicinal relevance: Synthesis, characterization, antibacterial activity and 3D-molecular modeling of some penta-coordinated manganese(II) chelates in O,N-donor coordination matrix of β -diketoenolates and picolinate, (2011) *Arabian Journal of Chemistry*, in press.
30. Chandra, V.K., Tiwari, M., Chandra, B.P., Ramrakhiani, M., Electroluminescence overshoot effect in single layer pulsed organic light emitting diodes, (2011) *Synthetic Metals*, 161 (5-6), pp. 460-465.
31. Maurya, R.C., Shukla, B., Chourasia, J., Roy, S., Bohre, P., Sahu, S., Martin, M.H., Coordination chemistry of pyrazolone based Schiff bases relevant to uranyl sequestering agents: Synthesis, characterization and 3D molecular modeling of some octa-coordinate mono- and binuclear-dioxouranium(VI) complexes, (2011) *Arabian Journal of Chemistry*, in press.
32. Maurya, R.C., Chourasia, J., Martin, M.H., Roy, S., Sharma, A.K., Vishwakarma, P., Dioxomolybdenum(VI) chelates of bioinorganic, catalytic, and medicinal relevance: Studies on some cis-dioxomolybdenum(VI) complexes involving O, N-donor 4-oximino-2-pyrazoline-5-one derivatives, (2011) *Arabian Journal of Chemistry*, in press.
33. Maurya, R.C., Jhamb, S., Roy, S., Chourasia, J., Sharma, A.K., Vishwakarma, P., Synthesis, characterization, and 3D-molecular modeling and analysis of some copper(II) chelates in O,N-donor coordination pattern involving Schiff bases derived from 4-butyryl-3-methyl-1-phenyl-2-pyrazolin-5-one and some sulfa drugs (2011) *Arabian Journal of Chemistry*, in press.
34. Maurya, R.C., Sutradhar, D., Martin, M.H., Roy, S., Chourasia, J., Sharma, A.K., Vishwakarma, P., Oxovanadium(IV) complexes of medicinal relevance: Synthesis, characterization, and 3D-molecular modeling and analysis of some oxovanadium(IV) complexes in O,N-donor coordination matrix of sulfa drug Schiff bases derived from a 2-pyrazolin-5-one derivative, (2011) *Arabian Journal of Chemistry*, in press.
35. Gupta, M., Pillai, A.K.K.V., Singh, A., Jain, A., Verma, K.K., Salt-assisted liquid-liquid microextraction for the determination of iodine in table salt by high-performance liquid chromatography-diode array detection, (2011) *Food Chemistry*, 124 (4), pp. 1741-1746.
36. Gupta, A.K., Bajpai, R., Keller, J.M., Transient charging and discharging current study in pure PVF and PVF/PVDF fluoro polyblends for application in microelectronics, (2011) *Bulletin of Materials Science*, 34 (1), pp. 105-112.
37. Gaur, M.S., Singh, R., Singh, P.K., Indolia, A.P., Singh, R., The effect of annealing time on thermally stimulated discharge current of corona-charged ethyl cellulose, (2011) *Journal of Thermal Analysis and Calorimetry*, 103 (2), pp. 679-683.

38. Sharma, N., Jain, A., Singh, V.K., Verma, K.K., Solid-phase extraction combined with headspace single-drop microextraction of chlorophenols as their methyl ethers and analysis by high-performance liquid chromatography-diode array detection, (2011) *Talanta*, 83 (3), pp. 994-999.
39. Chhatri, A., Bajpai, J., Bajpai, A.K., Sandhu, S.S., Jain, N., Biswas, J., Cryogenic fabrication of savlon loaded macroporous blends of alginate and polyvinyl alcohol (PVA). Swelling, deswelling and antibacterial behaviors, (2011) *Carbohydrate Polymers*, 83 (2), pp. 876-882.
40. Sharma, R., Rajak, R.C., Pandey, A.K., Mass multiplication of ectomycorrhizal *Cantharellus inocolum* for large scale tailoring nursery inoculations of bamboo seedlings, (2011) *Asian Journal of Scientific Research*, 4 (1), pp. 84-89.
41. Gupta, P., Gupta M. K., Singhal, P. K., Characterization of *Bacillus* spp. with bile salt hydrolase activity for biotherapeutic applications, (2011) *IJPI Int. J. Biotechnol. Biotherap.*, 3, pp. 22-30.
42. Khan, S., Dwivedi, M.K., tripathi, A.K., Shukla, S., Homocysteine and Cardiovascular disease, (2011) *Biotechnology and Molecular Biology Reviews*, 5, pp. 101-107.
43. De, K., Patel, P., Jaysawal, N., Antimicrobial potential of actinomycetes isolated from Arogyadham Jabalpur, (2011) *Indian Journal of Applied & Pure Biology*, 26, pp. 205-208.
44. Mishra, R.P., Tripathi, M., Girdoniya, V., Histopathological changes in liver of a teleost fish *Catla catla* treated with 1.2% lindane, (2011) *Journal of Fisheries and Aquaculture*, 2, pp. 17-19.
45. Singh, R.I., Singh, S.S., Development of Transformation System of *Verticillium lecanii* (*Lecanicillium* spp.) (Deuteromycotina: Hyphomycetes) Based on Nitrate Reductase Gene of *Aspergillus nidulans*, (2011) *Indian Journal of Microbiology*, pp. 1-6.
46. Sharma, A.K., Naithani, R., Kumar, V., Sandhu, S.S., Iron Regulation in Tuberculosis Research: Promise and Challenges, *Current medicinal chemistry*, (2011) 18, pp. 1723-1731.
47. Sadaf, Q., Khan, N.A., Pandey, A.K., Anthraquinone pigment with herbicidal potential from *Phoma* herbarum FGEE # 54, (2011) *Chemistry of Natural Compounds*, 47, PP. 521-523.
48. Singh, S., Dutta, P., Responses of multiple herbicide resistant strain of diazotrophic cyanobacterium *Anabaena variabilis*, (2011) *Indian Journal of Experimental Biology*, 49, pp. 298-303.
49. Banerjee, N., Pandey, A.K., Jamaluddin, First report of the Dreeshlera state of *Cochhobolus specifer* infecting seeds of *Parthenium hysterophorus* in India, (2011) *New Disease Reports*, 24, p. 7.
50. Pandey, S., Bansal, Y.K., In vitro regeneration of Brahmi (*Bacopa monnieri* L. Pennel) and synthetic seed formation, *Flora and Fauna*, 17, pp. 195-201.
51. Verma, K.S., Rojan, B., Screening of extracts of *Tinospora cordifolia* Miers. To evaluate the antifungal activity, (2011) *Bioscience Guardian an International Journal*, 1, pp. 431-433.
52. Gupta, P., Gupta M. K., Singhal, P. K., Molecular methods for rapid generic level identification of environmental isolates of *Bacillus* sp., (2011) *J. Adv. Biotech.*, 10, pp. 11-15.
53. Verma, K.S., Padhyen, S., Phospholipase Activity in clinical fungal isolates from diabetic patients, (2011) *Journal of Pharmacology research*, 2, pp. 40- 45.
54. Bharadwaj, R.D., Problems in terrorism in India, (2011) *Various Dimension of Terrorism*, pp. 11-21.
55. Tiwari, B., Manvendranath Roy ka navmanav vad aur Nandkishor Devraj ka sarjanatmak manav vad ek tulnatmak adhyayan, (2010-11) *Samaj Dharm evam Darshan Patrika*.
56. Shrivastava, A., Khan, A.A., Jain, S.K., Singhal, P.K., Jain, S., Marotta, F., Yadav, H., Biotechnological advancement in isolation of anti-neoplastic compounds from natural origin: A novel source of L-asparaginase, (2010) *Acta Biomedica*, 81, pp. 104-108.
57. Ramrakhiani, M., Dongre, J.K., Enhanced photovoltaic effect using nanostructured multi-layered photoelectrode, (2010) *Ceramic Engineering and Science Proceedings*, 31, pp. 83-90.
58. Gupta, M., Jain, A., Verma, K.K., Determination of amoxapine and nortriptyline in blood plasma and serum by salt-assisted liquid-liquid microextraction and high-performance liquid chromatography, (2010) *Journal of Separation Science*, 33 (23-24), pp. 3774-3780.

59. Kumar, S., Raizada, A., Study of geomagnetic storms with Dst < -100 nT during 1999 – 2002, (2010) *Indian Journal of Radio and Space Physics*, 39 (5), pp. 284-289.
60. Verma, K.S., Iqbal, Y., Khare, D., Ethno-medicinal importance of weeds and their present status in Jabalpur, (2010) *Vegetos*, 23 (2), pp. 33-41.
61. Upadhyay, M.K., Kumar, A., Pandey, A.K., Optimization for production of fungal amylases isolated from penicillium chrysogenum (FGC/JNU201) in solid state fermentation, (2010) *Asian Journal of Microbiology, Biotechnology and Environmental Sciences*, 12 (4), pp. 731-734.
62. Singh, J., Pandey, A.K., Effect of temperature and storage time on shelf life of mycoherbicidal products of colletotrichum dematium FGCC#20, (2010) *American Journal of Agricultural and Biological Science*, 5 (3), pp. 315-320.
63. Chandra, B.P., Goutam, R.K., Chandra, V.K., Raghuwanshi, D.S., Luka, A.K., Baghel, R.N., Mechanoluminescence induced by elastic and plastic deformation of coloured alkali halide crystals at fixed strain rates, (2010) *Radiation Effects and Defects in Solids*, 165 (12), pp. 907-919.
64. Sharma, A., Bhattacharya, A., Enhanced biomimetic sequestration of CO₂ into CaCO₃ using purified carbonic anhydrase from indigenous bacterial strains, (2010) *Journal of Molecular Catalysis B: Enzymatic*, 67 (1-2), pp. 122-128.
65. Sharma, R., Baghel, R.K., Pandey, A.K., Dynamics of acid phosphatase production of the ectomycorrhizal mushroom *Cantharellus tropicalis*, (2010) *African Journal of Microbiology Research*, 4 (20), pp. 2072-2078.
66. Gautam, S.P., Bundela, P.S., Pandey, A.K., Awasthi, M.K., Sarsaiya, S., Evolution of composting as a strategy for managing organic municipal solid wastes in central India, (2010) *Australian Journal of Basic and Applied Sciences*, 4 (10), pp. 5451-5455.
67. Quereshi, S., Panjwani, R., Pandey, A.K., Singh, A.K., Formulation of phytotoxins from *Phoma* sp. FGCC#18 for the management of *Parthenium hysterophorus* L., (2010) *Archives of Phytopathology and Plant Protection*, 43 (13), pp. 1260-1267.
68. Thakur, R., Sandhu, S.S., Species confirmation of fungal isolates by molecular analysis, (2010) *Indian Journal of Microbiology*, 50 (3), pp. 280-291.
69. Waxar, H., Sen, D., Ramrakhiani, M., Study of different parameters in nanocrystalline CdSe based photoelectrochemical cells, (2010) *Optoelectronics and Advanced Materials, Rapid Communications*, 4 (8), pp. 1208-1210.
70. Gautam, S.P., Bundela, P.S., Pandey, A.K., Jamaluddin, Awasthi, M.K., Sarsaiya, S., Physicochemical analysis of municipal solid waste compost, (2010) *Journal of Applied Sciences Research*, 6 (8), pp. 1034-1039.
71. Khare, P.K., Pal, A., The effect of electric field stress on pure poly(vinyl chloride), poly(methyl methacrylate) and their polyblend samples, (2010) *Journal of Electrostatics*, 68 (4), pp. 328-336.
72. Gautam, S.P., Bundela, P.S., Pandey, A.K., Jamaluddin, Awasthi, M.K., Sarsaiya, S., Municipal solid waste management in central India, (2010) *Journal of Applied Sciences Research*, 6 (8), pp. 1029-1033.
73. Saggi, M., Jain, A., Bagchi, D., Sodium selenate effect on *Synechococcus elongatus* PCC 7942: Appearance of novel enzymatic reaction, ATP:Selenate adenylyltransferase, and variation in antioxidant enzyme activities, (2010) *Journal of Basic Microbiology*, 50 (4), pp. 351-359.
74. Jain, A., Pillai, A.K.K.V., Sharma, N., Verma, K.K., Headspace single-drop microextraction and cuvetteless microspectrophotometry for the selective determination of free and total cyanide involving reaction with ninhydrin, (2010) *Talanta*, 82 (2), pp. 758-765.
75. Maurya, R.C., Martin, M.H., Jhamb, S., Chourasia, J., Roy, S., Sharma, A.K., oxovanadium(IV) complexes of bioinorganic and medicinal (anticancer and antidiabetic) relevance: synthesis, magnetic, spectral and thermal studies, and 3D-molecular modeling analysis of some new mononuclear and binuclear oxovanadium(IV) complexes involving (N,N)-donor environment of benzimidazole derivatives and succinimide, (2010) *Int. J. Curr. Chem.*, 1, pp. 305-328.

76. Sharma, A., Kumar Patel, V., Rawat, S., Ramteke, P., Verma, R., Identification of the antibacterial component of some indian medicinal plants against klebsiella pneumoniae, (2010) *International Journal of Pharmacy and Pharmaceutical Sciences*, 2 (3), pp. 123-127.
77. Das, P.K., Bagchi, S.N., Bentazone and bromoxynil induce H⁺ and H₂O₂ accumulation, and inhibit photosynthetic O₂ evolution in *Synechococcus elongatus* PCC7942, (2010) *Pesticide Biochemistry and Physiology*, 97 (3), pp. 256-261.
78. Gokhale, M., Bansal, Y.K., Assessment of secondary metabolites in in vitro regenerated plantlets of *oroxylum indicum* (L.) vent, (2010) *Plant Tissue Culture and Biotechnology*, 20 (1), pp. 21-28.
79. Kedia, R.G., Misra, B.L., Narkhede, V.P., Partially balanced part ternary design, (2010) *International Journal of Agricultural and Statistical Sciences*, 6 (1), pp. 335-341.
80. Sanodiya, B., Thakur, G., Baghel, R., Pandey, A., Prasad, G., Bisen, P., Isolation and characterization of tenuazonic acid produced by *Alternaria alternata*, a potential bioherbicidal agent for control of *Lantana camara*, (2010) *Journal of Plant Protection Research*, 50 (2), pp. 133-139.
81. Verma, K.S., Saxena, N., Sinha, R., Agarwal, A., Phytochemical screening and therapeutic profiling of *Madhuca indica* J.F. Gmel, (2010) *Vegetos*, 23 (1), pp. 109-115.
82. Sarkar, A.K., Rai, E., Shah, S.N., Bouddha, S., Bansal, Y.K., Ansari, S.A., Changes in enzyme activities, soluble sugars and phenols during in vitro adventitious shoot regeneration from leaflet explants of *Albizia procera* (Roxb.) Benth, (2010) *New Forests*, 40 (3), pp. 323-334.
83. Singh, J., Quereshi, S., Banerjee, N., Pandey, A.K., Production and Extraction of Phytotoxins from *Colletotrichum dematium* FGCC# 20 effective against *Parthenium hysterophorus* L., (2010) *Brazilian Archives of Biology and Technology*, 53 (3), pp. 669-678.
84. Jamaluddin, Shukla, R., Pandey, A.K., Modified technique for the study of plant microbe interaction in culture medium, (2010) *National Academy Science Letters*, 33 (1-2), pp. 9-10.
85. Kumar, S., Raizada, A., Geoeffectiveness of magnetic clouds occurred during solar cycle 23, (2010) *Planetary and Space Science*, 58 (5), pp. 741-748.
86. Upadhyay, M.K., Jain, D., Singh, A., Pandey, A.K., Rajak, R.C., Assessment of genetic and biochemical diversity of ecologically variant ectomycorrhizal *Russula* sp. from India, (2010) *African Journal of Biotechnology*, 9 (12), pp. 1758-1763.
87. Pillai, A.K.K.V., Jain, A., Verma, K.K., Headspace single-drop microextraction and fibre optics-based cuvetteless micro-spectrophotometry for the determination of chloride involving oxidation with permanganate, (2010) *Talanta*, 80 (5), pp. 1816-1822.
88. Dubey, P., Ray, P., Pandey, A., First record of entomopathogen *beauveria bassiana* (Bals.-Criv.) vuill. on *zygogramma bicolorata* pallister, a biocontrol agent of *parthenium hysterophorus* L., (2010) *Journal of Plant Protection Research*, 50 (1), pp. 53-55.
89. Nawange, S.R., Singh, K., Naidu, J., Singh, S.M., Naturally acquired systemic dual infection caused by *Candida famata* (*Debaryomyces hansenii*) and *Candida catenulata* in albino rats bred for sale in the market at Jabalpur (Madhya Pradesh), India, (2010) *Mycoses*, 53 (2), pp. 173-175.
90. Chandra, B.P., Bagri, A.K., Chandra, V.K., Mechanoluminescence response to the plastic flow of coloured alkali halide crystals, (2010) *Journal of Luminescence*, 130 (2), pp. 309-314.
91. Raizada, A., Kumar, S., Khare, S., Dependence of successive GMSs with Dst < -100 nT on solar and interplanetary parameters, (2010) *Indian Journal of Physics*, 84 (2), pp. 183-192.
92. Agrawal, A., Jha, V.N., Deficient Discrete Cubic Spline Interpolation, (2010) *Inter. Transactions in Math. Sciences & Computers*, 3(2), pp. 215-24.
93. Rana, S.S., Choudhary, P.R.S., Convergence of Deficient Quintic Spline Interpolation, (2010) *Journal of International Academy of Physical Sciences*, 14(2), pp. 159-167.

Part C

Details on the plan of the institution for the next year

The IQAC proposes the following key activities marked for various departments of the university. These plans are related with teaching and research in departments at individual/inter-departmental basis. Specific plans are also formulated for administrative obligation.

| Department | Plans of institution for the next year |
|------------------------------|--|
| AIHCA | <ul style="list-style-type: none"> Field study of Gondwana region, and excavation tours. |
| Life-long Learning Education | <ul style="list-style-type: none"> Strengthening of infrastructural facilities. Proposal for funds for construction of separate building for the department. Proposal for audio-visual equipment and adult education accessories. |
| Economics | <ul style="list-style-type: none"> Up-gradation of existing facilities on internet and computers. |
| Chemistry | <ul style="list-style-type: none"> Awareness on occupational health. Green methodologies in the practice of chemistry. Introduction of safe and micro-operations in teaching laboratory. Development of suitable techniques by research. Popularization of such methods through workshops. |
| Geography | <ul style="list-style-type: none"> Strengthening of the department facilities. Workshops on field-surveys. |
| Library & Info. Science | <ul style="list-style-type: none"> Development of ICT systems. Library automation and strengthening of readers support facilities. |
| UIM | <ul style="list-style-type: none"> Strengthening of institute-industry interactions. Workshops on use of computers in office management. Students' placement services, and campus interviews. |
| Sanskrit | <ul style="list-style-type: none"> Religious ways in protection of water bodies, especially the river Narmada. Organization of classical stage plays in Sanskrit in the campus. Inculcation of moral values among students by cultural street plays. |
| Biological Science | <ul style="list-style-type: none"> Further up-gradation of central instrumentation laboratory. Monitoring of biological pollution in river Narmada water, and other water bodies of Jabalpur. Mushroom culture. Workshops for dissemination of knowhow. |
| Journalism | <ul style="list-style-type: none"> Up-gradation of facilities on print services. |
| Physics and Electronics | <ul style="list-style-type: none"> Introduction of new courses on material science/nano-technology. Up-gradation of teaching laboratories including procurement of laser sources. Luminescence and areas of its possible use alternative to electricity. |
| Philosophy | <ul style="list-style-type: none"> Professional ethics, research activities, seminars, discussion, student teachers interaction. Moral counseling and programmes on social ill-practices. |
| Physical Education | <ul style="list-style-type: none"> Workshops on players psychology, and personal fitness. Organization of sports skill development programmes. |
| Law | <ul style="list-style-type: none"> Construction of moot court building. National level competitions, and students support. Legal aspects on moral issues. Social behaviour. |
| Mathematics | <ul style="list-style-type: none"> Beginning of research programme on computer science. Ramanujam Centre proposal for support of young mathematicians. |
| UICSA | <ul style="list-style-type: none"> Fresh and state-of-art courses on software/hardware technologies. |
| Education | <ul style="list-style-type: none"> Teaching methodologies and virtual classes. Application of ICT. Teaching programmes for electronic media. |



(Coordinator, IQAC)



(Chairperson, IQAC)

