12. **Evaluative Report of the Department**

1. Name of the Department: **School of Studies in Zoology**
2. Year of establishment: **1971**
3. Is the Department part of a School/Faculty of the university? **This itself is one of the School of the University.**
4. Names of programmes offered: **M.Sc., M.Phil., Ph.D., D.Sc.:**
5. Interdisciplinary programmes and departments involved:
6. Courses in collaboration with other universities, industries, foreign institutions, etc.:  
7. Details of programmes discontinued, if any, with reasons:
8. Examination System: **Semester System**
9. Participation of the department in the courses offered by other departments
10. Number of teaching posts sanctioned, filled and actual

<table>
<thead>
<tr>
<th></th>
<th>Sanctioned</th>
<th>Filled</th>
<th>Actual (including CAS &amp; MPS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor</td>
<td>1</td>
<td>1</td>
<td>5 (MPS-02, CAS-03)</td>
</tr>
<tr>
<td>Associate Professors</td>
<td>3</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Asst. Professors</td>
<td>6</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance

<table>
<thead>
<tr>
<th>Name</th>
<th>Qualifications</th>
<th>Designation</th>
<th>Specialization</th>
<th>No. of Years of Experience</th>
<th>No. of Ph.D./M.Phil. students guided for the last 4 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. A.K. Jain</td>
<td>Ph.D.</td>
<td>Professor</td>
<td>Pigment cell Biology Neuroendocrinology, Fish &amp; Fisheries</td>
<td>36</td>
<td>1/6</td>
</tr>
<tr>
<td>Prof. O.P. Agrawal</td>
<td>Ph.D.</td>
<td>Professor</td>
<td>General &amp; Applied Entomology, vermiculture Economic Zoology Environmental conservation</td>
<td>34</td>
<td>13</td>
</tr>
<tr>
<td>Dr. Sangeeta Shukla</td>
<td>Ph.D., D.Sc.</td>
<td>Professor</td>
<td>Environmental toxicology &amp; Hepato-protection</td>
<td>26</td>
<td>13</td>
</tr>
<tr>
<td>Dr. I.K. Patro</td>
<td>Ph.D.</td>
<td>Professor</td>
<td>Neurobiology</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>Dr. P.K. Tiwari</td>
<td>Ph.D.</td>
<td>Professor</td>
<td>Cell &amp; Molecular Biology</td>
<td>26</td>
<td>7</td>
</tr>
<tr>
<td>Dr. R.J. Rao</td>
<td>Ph.D.</td>
<td>Professor</td>
<td>Aquatic Biology &amp; Conservation management</td>
<td>26</td>
<td>8</td>
</tr>
</tbody>
</table>

12. List of senior Visiting Fellows, adjunct faculty, emeritus professors: NIL

13. Percentage of classes taken by temporary faculty – programme-wise information – Guest Faculty

14. Programme-wise Student Teacher Ratio: 15:1

15. Number of academic support staff (technical) and administrative staff: sanctioned, filled and actual: 03

16. Research thrust areas as recognized by major funding agencies: UGC, DST, DBT, ICMR, MPCST - SYSTEM BIOLOGY AND ENVIRONMENTAL TOXICOLOGY (UGC)
17. Number of faculty with ongoing projects from a) national b) international funding agencies and c) Total grants received. Give the names of the funding agencies, project title and grants received project-wise.

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Funding Agency</th>
<th>Title of Programme / Project</th>
<th>Coordinator</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>UGC</td>
<td>SAP-DRS Phase III on Systems Biology and Environmental Toxicology</td>
<td>Dr. R.J. Rao</td>
<td>2013-18 (5 years)</td>
</tr>
<tr>
<td>2.</td>
<td>Jiwaji University</td>
<td>Vermicomposting Center (Recycling waste biomass of the campus)</td>
<td>Dr. O.P. Agrawal</td>
<td>(Self-sustained)</td>
</tr>
<tr>
<td>3.</td>
<td>UGC</td>
<td>Special infrastructure grant (Rs. 40 lakhs) for teaching &amp; Research</td>
<td>Head</td>
<td>2007-12</td>
</tr>
<tr>
<td>4.</td>
<td>UGC</td>
<td>SAP-DRS Phase III Systems Biology and Environmental Toxicology (Rs. 73 lakhs)</td>
<td>Dr. R. J. Rao</td>
<td>2013-18</td>
</tr>
<tr>
<td>5.</td>
<td>FIST-DST</td>
<td>Instrumental grant (Rs170 lakhs)</td>
<td>Dr. Sangeeta Shukla</td>
<td>2013-18</td>
</tr>
</tbody>
</table>

18. Inter-institutional collaborative projects and associated grants received

a) National collaboration  
b) International collaboration

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Funding Agency</th>
<th>Title of Programme / Project</th>
<th>PI / Coordinator</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>MCBT</td>
<td>Gharial monitoring in the National Chambal Sanctuary</td>
<td>Dr. R.J. Rao</td>
<td>2006-2008</td>
</tr>
<tr>
<td>2.</td>
<td>DBT</td>
<td>Role of microglia in adult neurogenesis</td>
<td>Dr. I.K. Patro</td>
<td>2006-2009</td>
</tr>
<tr>
<td>3.</td>
<td>CCRUM, New Delhi</td>
<td>Ameliorative effect of natural product in liver regeneration against model hepatotoxicants</td>
<td>Dr. Sangeeta Shukla</td>
<td>2007-2009</td>
</tr>
<tr>
<td>4.</td>
<td>CCRUM, New Delhi</td>
<td>Hepatoprotective efficacy of few Unani medicines</td>
<td>Dr. Sangeeta Shukla</td>
<td>2007-2010</td>
</tr>
<tr>
<td>5.</td>
<td>DBT, New Delhi</td>
<td>Genetic polymorphism in tribal population of north M.P. in relation to genomic diversity &amp; susceptible to tuberculosis</td>
<td>Dr. P.K. Tiwari &amp; Dr. R.N.K. Bamezai</td>
<td>2007-2010</td>
</tr>
<tr>
<td>6.</td>
<td>ICMR</td>
<td>Ageing of microglia</td>
<td>Dr. I.K. Patro</td>
<td>2007-2010</td>
</tr>
<tr>
<td>7.</td>
<td>DRDE Gwalior</td>
<td>A study on anti-coagulative, anti-inflammatory,anti-antioxidant antibacterial properties of crude &amp; extracted fractions of earthworm Eudrilus eugeniae.</td>
<td>Dr. O.P. Agrawal</td>
<td>2008-2010</td>
</tr>
<tr>
<td>8.</td>
<td>DBT, New Delhi</td>
<td>Phenotypic alteration in astroglia &amp; microglia in the brain in response to tuberculous pathology.</td>
<td>Dr. I.K. Patro</td>
<td>2008-2010</td>
</tr>
<tr>
<td>9.</td>
<td>MPCOST Bhopal</td>
<td>A critical evaluation of occupational health hazards: role of trace elements and micronutrients</td>
<td>Dr. Sangeeta Shukla</td>
<td>2008-2011</td>
</tr>
<tr>
<td>10.</td>
<td>UGC, New Delhi</td>
<td>Beryllium induced hepatic &amp; renal manifestations: amelioration by natural</td>
<td>Dr. R. Mathur</td>
<td>2008-2011</td>
</tr>
<tr>
<td></td>
<td>Projects</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>---</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td><strong>DRDE Gwalior</strong>&lt;br&gt;A study on the treatment of sewage sludge through culture of vermicomposting earthworms and its influence on community health.</td>
<td>Dr. O.P. Agrawal&lt;br&gt;2008-2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td><strong>ICMR</strong>&lt;br&gt;Genetic Diversity of HLA in the two Tribal Groups of North Madhya Pradesh: Association with pulmonary tuberculosis</td>
<td>Dr. P.K. Tiwari&lt;br&gt;2009-2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td><strong>MPCST</strong>&lt;br&gt;Documentation of vertebrates in wetlands of North Madhya Pradesh.</td>
<td>Dr. R.J. Rao&lt;br&gt;2009-2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td><strong>MPCST</strong>&lt;br&gt;Documentation of vertebrates in wetlands of North Madhya Pradesh.</td>
<td>Dr. R.J. Rao&lt;br&gt;2009-2012</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td><strong>DRDE</strong>&lt;br&gt;Role of Spirulina fusiformis and Micronutrients against Beryllium Induced Toxicity.</td>
<td>Sangeeta &amp; Dr. Mathur&lt;br&gt;2011-2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td><strong>UGC</strong>&lt;br&gt;Antituberculosis drugs induced hepatic adverse effects: prevention by natural products</td>
<td>Dr. Sangeeta Shukla&lt;br&gt;2011-2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td><strong>ICMR</strong>&lt;br&gt;Impact of maternal exposure to deltamethrin during gestation on cerebellar organization and cognitive development of the newborn</td>
<td>I.K. Patro&lt;br&gt;2011-2013</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td><strong>DST</strong>&lt;br&gt;Mutation profiling of gall bladder cancer and gall stone diseases to identify potential biomarkers for early diseases diagnosis</td>
<td>Prof. P.K. Tiwari&lt;br&gt;2012-2015</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td><strong>ICMR</strong>&lt;br&gt;Study on genetic polymorphism in <em>Mycobacterium tuberculosis</em> isolates from Sahariya tribes of North Central India</td>
<td>Prof. P.K. Tiwari&lt;br&gt;2010-2013</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PDF**

<table>
<thead>
<tr>
<th></th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>22.</td>
<td><strong>DST, WOS Scientist A</strong>&lt;br&gt;Reversal of aluminum induced toxicity in rats by combination therapy: a novel approach</td>
</tr>
<tr>
<td>23.</td>
<td><strong>DST, WOS Scientist A</strong>&lt;br&gt;Influence of few polyphenolic compounds on signaling pathway in resurgence of acrylamide toxicity</td>
</tr>
</tbody>
</table>

19. Departmental projects funded by DST-FIST; UGC-SAP/CAS, DPE; DBT, ICSSR, AICTE, etc.; total grants received.

**The faculty members had received various research projects during last five years from UGC, DBT, DST, MPCST, MPETB, ICMR, MOEF and CCRUM. The total amount is approximately Rs. 155.75 lakhs for equipment, contingency and salaries of research students.**

20. Research facility / centre with

- [ ] state recognition
- [ ] national recognition
- [ ] international recognition

21. Special research laboratories sponsored by/ created by industry or corporate
22. **Publications:**

**2010**


2011


43. Swarnkar, S., Goswami, P., Kamat, P.K., Patro, I.K., Singh, Sarika and Nath, C.


2012


induced toxicological consequences. Beneficial Effects of Propolis on Human Health and Chronic Diseases-Vol 1, Nova publishers, USA


75. Sadhana Shrivastava (2012) Protective evaluation of Zingiber officinale in aluminium induced toxicity in rats. Trace Elements in Medicine, Moscow, Russia 13(1)-10.


2013

86. Y.S. Narwaria & D.N. Saksena (2013) Prevalence of Dental Fluorosis Among Primary School Children in Rural Areas of Karera Block, Madhya Pradesh. Indian J Pediatr (Accepted: 8 May 2013)

90. Samta Sharma, Sadhana Shrivastava and Sangeeta Shukla. Reversal of lead-induced toxicity by antioxidants in rats: Role of reactive oxygen species Journal of Environmental Pathology, Toxicology and Oncology (Accepted) Impact Factor: 1.2


2014


Chapters in Books *


Edited Books


* Citation Index – range / average

<table>
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<tr>
<th></th>
<th>All</th>
<th>Since 2009</th>
</tr>
</thead>
<tbody>
<tr>
<td>Citations</td>
<td>925</td>
<td>690</td>
</tr>
<tr>
<td>h-index</td>
<td>15</td>
<td>14</td>
</tr>
<tr>
<td>i10-index</td>
<td>25</td>
<td>18</td>
</tr>
</tbody>
</table>

23. Details of patents and income generated

- Patent has been filed for Indian and US patent entitled “Propolis extract: an potent antioxidant and hepatoprotective agent and the process for preparation thereof”.
  - Application No: 1827/DEL/2009 A
  - Date of filing: 03/09/2009
  - Publication date 2010-04-23
  - Name of inventors: Sangeeta Shukla, Monika Bhadauria, Satendra Kumar Nirala, Sadhana Shrivastava and Shamshad Ahmed.

24. Areas of consultancy and income generated: Charak Udyan

25. Faculty selected nationally / internationally to visit other laboratories / institutions / industries in India and abroad

(a) Intra and Inter Departmental

Collaborative research projects on environment, toxicity, apiculture, fisheries have been taken by the faculty members. In addition research programmes on environment have been taken with various Schools of studies in Botany, Chemistry, Environmental Sciences of the Jiwaji University. Some staff members are involved in teaching in School of Studies in Environmental Science and Biotechnology.

(b) National Organizations

Research programmes have been taken up with Salim Ali Centre for Ornithology and Natural History, Coimbatore on Wetland ecology in Madhya Pradesh and Chattisgarh; aquatic and biosphere management with Wildlife Institute of India, Dehradun, Cancer Research Institute, Teaching & research collaboration with faculty of Entomology Dept.
of Agriculture College, Gwalior, extension work for Apiculture with Farmers’ Training Institute, Dept. of Agriculture, Gwalior. Prof. O.P. Agarwal has also taken up research programmes in collaboration with the Scientists in Indian Agricultural Research Institute, New Delhi, Agricultural University, Hissar and Department of Biotechnology, Bharatidasan University, Trichi. Prof. D.N. Saksena is working on aquatic animal biology in collaboration with OUAT, Berhampur and Central Institute of Freshwater Aquaculture, Bhubaneswar, Orissa and college of Fisheries, Ratnagiri, Maharashtra. Prof. Sangeeta Shukla is collaborating with IIIM, CSIR Institutie, Jammu for hepatoprotective studies.

(c) Non-Government organization

Environmental Awareness Programmes have been organised in collaboration with various NGOs like Centre for Integrated Development, Sambhav, Forester’s Society, etc. in Gwalior. Watershed programmes are also carried out in collaboration with these Non-Government Organisations. Biodiversity studies haven been carried out in collaboration with Kalpavrikh, a Pune based NGO. Dr. A. K. Tiwari is working with Scientist from National Dope Testing Laboratory, New Delhi and with Scientist from DRDE, Gwalior.

(d) International organizations

1. UNESCO Trace Element study centre
2. GCA on crocodile studies
3. TSA on Turtle studies

(e) Other Institutions

The faculty members are working under collaborative programmes with Forest Departments of Madhya Pradesh, Rajasthan, Uttar Pradesh etc., extension programmes with Worldwide fund, New Delhi and Bhopal, Environmental Protection and Coordination Organisation, Bhopal etc. Research collaboration with Defense Research and Development Establishment, Gwalior in Toxicology, Entomology and Biochemistry Divisions

26. Faculty serving in
   a) National committees b) International committees c) Editorial Boards d) any other (please specify)

27. Faculty recharging strategies (UGC, ASC, Refresher / orientation programs, workshops, training programs and similar programs).
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of the Faculty</th>
<th>Country Visited</th>
<th>Purpose</th>
<th>Year of Visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Prof. A.K. Jain</td>
<td>Japan, Italy</td>
<td>INSA/JSPS visiting research fellowship NATO fellowship</td>
<td>1980-81, 1986</td>
</tr>
<tr>
<td>4</td>
<td>Prof. P.K. Tiwari</td>
<td>USA</td>
<td>DBT/GOI Overseas Associateship</td>
<td>1995-96</td>
</tr>
</tbody>
</table>
28. **Student projects**

- percentage of students who have done in-house projects including inter-departmental projects
- percentage of students doing projects in collaboration with other universities / industry / institute

29. **Awards / recognitions received at the national and international level by Faculty**

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Awards / Recognitions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prof. D. N. Saksena</td>
<td>UGC-British Council Exchange Fellowship&lt;br&gt;Indo-US Fellowship&lt;br&gt;INSA-JSPS Fellowship&lt;br&gt;Prof. J.S. Dutta Mushi Gold Medal</td>
</tr>
<tr>
<td>Prof. A. K. Jain</td>
<td>INSA-JSPS Visiting Fellowship, Japan&lt;br&gt;NATO Fellowship Italy</td>
</tr>
<tr>
<td>Prof. O. P. Agrawal</td>
<td>DAAD (German Academic Exchange service)&lt;br&gt;DAAD Re-invitation Fellowship&lt;br&gt;GTZ (Germany) Material &amp; Equipment Grant&lt;br&gt;Best Paper Award (DRDE)</td>
</tr>
<tr>
<td>Prof. Sangeeta Shukla</td>
<td>Member, Executive Committee of NAAC (2013-2016)&lt;br&gt;Vice President for Asian Continent TEU, UNESCO, France&lt;br&gt;Council Member of ‘ISTERH, 2007-2013&lt;br&gt;Fellowship Welcome Trust Group, UK&lt;br&gt;UNESCO- ROSTSCA, Young Scientists award&lt;br&gt;ISCA Young Scientist&lt;br&gt;M.P. Young Scientist&lt;br&gt;IDMA Research award&lt;br&gt;Scientist of the Year&lt;br&gt;Gold Medal by STOX&lt;br&gt;Teacher of the Year&lt;br&gt;UGC BSR grant of Rs 7 lakh for academic excellence, 2011</td>
</tr>
<tr>
<td>Prof. I.K. Patro</td>
<td>Fellow of National Academy of Sciences (India)&lt;br&gt;Fellow of the Indian Academy of Neurosciences&lt;br&gt;Fellow of Collegium Inter. Neuro-psycopharmacologicum&lt;br&gt;A.V. Tilak award&lt;br&gt;DBT Overseas Associateship&lt;br&gt;INSA-DFG Fellowship&lt;br&gt;KT Shetty Memorial Oration, Indian Academy Neurosciences</td>
</tr>
<tr>
<td>Prof. P. K. Tiwari</td>
<td>DBT Overseas Associateship</td>
</tr>
<tr>
<td>Prof. R. J. Rao</td>
<td>UNESCO Ecohydrology Fellowship</td>
</tr>
</tbody>
</table>
Member of International Union for Conservation of Nature, Switzerland

☐ Doctoral / post doctoral fellows

☐ Students

1. Mr. P.R. Sharma: Ist Prize for Best Poster Presentation in “International Conference on Medical and Community Genetics”. 13-14th February, 2008 PGIMER, Chandigarh.


5. Mr. P.R. Sharma: Young Scientist Award in 24th MP Young Scientist Congress, MP CST, Bhopal, March 2009


12. Praval Singh Chauhan, G.B.K.S.Prasad, O.P. Agrawal were awarded Best Poster Award for the poster entitled “Earthworms as a renewable source of food and medicine”presented in Seminar on Biodiversity Characterization and Environmental Impact, 28-29 September, 2011 organized by School of Studies in Zoology, Jiwaji University, Gwalior.


20. Mohd Salim Reshi:Young Scientist Award in Life Sciences in 29th M.P. Young Scientist Congress Feb28-March 1, 2014 “Protection against acetaminophen induced hepatotoxicity by the treatment with gold nanoparticles in rats”

21. T Dinesh Singh: Young Scientist Award in Medical Science including AYUSH in 29th M.P. Young Scientist Congress Feb28-March 1, 2014

30. Seminars/ Conferences/Workshops organized and the source of funding (national / international) with details of outstanding participants, if any.

<table>
<thead>
<tr>
<th>Number organized</th>
</tr>
</thead>
<tbody>
<tr>
<td>National</td>
</tr>
<tr>
<td>Organized</td>
</tr>
</tbody>
</table>

| Conferences | 1(RJ) | 1(IKP) | 1(SS) | - |
| Seminars | 3 (RJ) | - |
| Workshops | 4(RJ) | 1(PKT) | 1 (OPA) | - |

31. Code of ethics for research followed by the departments

32. Student profile programme-wise:

<table>
<thead>
<tr>
<th>Name of the Programme (refer to question no. 4)</th>
<th>Applications received</th>
<th>Selected</th>
<th>Pass percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
33. Diversity of students

<table>
<thead>
<tr>
<th>Name of the Programme (refer to question no. 4)</th>
<th>% of students from the same university</th>
<th>% of students from other universities within the State</th>
<th>% of students from universities outside the State</th>
<th>% of students from other countries</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise.


35. Student progression

<table>
<thead>
<tr>
<th>Student progression</th>
<th>Percentage against enrolled</th>
</tr>
</thead>
<tbody>
<tr>
<td>UG to PG</td>
<td></td>
</tr>
<tr>
<td>PG to M.Phil.</td>
<td></td>
</tr>
<tr>
<td>PG to Ph.D.</td>
<td></td>
</tr>
<tr>
<td>Ph.D. to Post-Doctoral</td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td></td>
</tr>
<tr>
<td>□ Campus selection</td>
<td></td>
</tr>
<tr>
<td>□ Other than campus recruitment</td>
<td></td>
</tr>
<tr>
<td>Entrepreneurs</td>
<td></td>
</tr>
</tbody>
</table>

36. Diversity of staff

<table>
<thead>
<tr>
<th>Percentage of faculty who are</th>
</tr>
</thead>
<tbody>
<tr>
<td>graduates of the same university</td>
</tr>
<tr>
<td>from other universities within the State</td>
</tr>
<tr>
<td>from universities from other States</td>
</tr>
</tbody>
</table>
from universities outside the country

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period: NIL

38. Present details of departmental infrastructural facilities with regard to

a) Library
   1. Dept. Library: No. of available books in the: 3526
   2. Journals in the Departmental library: Indian: 10, Foreign: 3
   3. Central library: JCCC@UGC-INFONET is available and is connected with the departmental internet

   - Internet facilities for staff and students
     ✓ Internet facilities generated from DST/FIST funds are available in the Department and also connected with INFLIBNET with Central Library of the University.
     ✓ Process of University Networking is in progress.

b) Total number of class rooms - 04
c) Class rooms with ICT facility -
d) Students’ laboratories - 06
e) Research laboratories - 07

Research laboratories
Animal House
Cold room
Tissue culture facility
Photography facilities including processing lab
Radiation Laboratory
Audio/visual teaching equipments
Department Seminar Hall
University Auditorium
University Science and Instrumentation Centre
Departmental or Library
University Library
Field equipment
Field station at National Chambal Sanctuary

39. List of doctoral, post-doctoral students and Research Associates

   a) from the host institution/university:
      PDF: WOS Scientists 01

   b) from other institutions/universities

40. Number of post graduate students getting financial assistance from the university: One
41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology.

42. Does the department obtain feedback from
   a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback?
   b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?
   c. alumni and employers on the programmes offered and how does the department utilize the feedback?

43. List the distinguished alumni of the department (maximum 10)
   Dr. Arvind Kumar Shakya. Asst. Prof. IGNOU 2011
   Dr. Satendra Kumar Nirala, Asst. Prof. GGU, Bilaspur 2011
   Dr. Monika Bhadauria, Asst. Prof. GGU, Bilaspur 2011
   Monika Saxena, Asst. Prof. Banasthali Vidhya Peeth, 2010
   Dr. Meenakshi Saxena, Asst. Prof.
   Dr. Ved Prakash, Asst. Prof.
   Dr. Jasweer Singh, Asst. Prof.
   Dr. Dinesh Uchharia, Asst. Prof.
   Dr. Dheraj Agarwal, Asst. Prof.
   Dr. Ram Naresh Kushwah, Asst. Prof.
   Dr. Rajesh Kumar, Asstt. Professor
   Dr. Sita Agarwal, Contract teaching
   Dr. Punjab Rao Chandelkar, Principal, Govt. College, Chhindwara (M.P.)
   Dr. Shashi Patil, Asst. Prof., Boston College, Gwalior (M.P.)
   Dr. P.K. Dubey, Scientist- Forensic Science Laboratory, Gwalior (M.P.)

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.

45. List the teaching methods adopted by the faculty for different programmes.
   1. Using conventional mode of black board and chalk sticks.
   2. Using overhead projection facility.
   3. Using computer assisted power point presentation.
   4. Employing smart class facilities.
   5. Conducting field visits, surveys ad excursions.

46. How does the department ensure that programme objectives are constantly met
and learning outcomes are monitored?
   a) By continuous course evaluation and evaluation of home assignments submitted by students.
   b) In IVth semester provision is made for student seminars attended by he faculty to monitor the learning by students.

47. Highlight the participation of students and faculty in extension activities.
   - Celebration of Work Environment Day, Wildlife Week, Earth Day in the field
   - Shumdan in the University campus
   - Awareness programme and social work through NSS – Unit.

48. Give details of “beyond syllabus scholarly activities“ of the department.
   - Live demonstration of vermin composting units of several occasions including science fairs, exhibition, seminars, symposia, conferences etc.
   - Exhibition of medicinal plants.

49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.
   Project based evaluation is done by all funding agencies like UGC, DST, DBT etc.

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.
   **Basic** –
   - Dd
   **Applied** –
   - Development of simple method of recycling of household (food and kitchen) waste through vermi composting (OPA)
   - Development of folding and transportable home vermin composting reactor (OPA)
   - Development of artificial pollen substitute diet for beekeeping during dearth period (OPA)

51. Detail of five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.
   **5 major strengths** –
   - Involvement of senior faculty (all 6 professors) for imparting teaching 4 specialised courses at PG and M.Phil. level.
   - Focussed research work in thrust areas (UGC) since 2002 supported by SAP programme.
• International exposure of faculty under the various such schemes of exchange programmes, conferences, seminars and other academic activities.
• Good infrastructural facilities (water and electricity back-up, lab furnishing, establishing central instrument laboratory, cold room, networking lab) supported by UGC – SAP, DST – FIST and other project grants.
• Flexibility to re-orient our approach by Modernizing course curricular modifying research plans in changing priasties at regional and national level.

5 major Weaknesss –
• Shortage of younger teaching faculty.
• Poor placement of pass out students due to non professional subject.
• Hindrance of timely progress due to lack of autonomy.

5 major Opportunities–
• Availability of several scholarships, fellowships for PG Post G and Post Doctoral studies under several categories.
• Availability of enough funds for research projects.
• Availability of enough opportunities for refreezing knowledge for facilities through refreshers courses, seminars, symposia, conference, workshops, exchange programme at national and international level.

5 major Challenges–
• To offer equal opportunity to students of various categories by organising remedial coaching in the school.
• To make available the literature in the desired language (Hindi/English) in the simplifies manner.
• Regular updation of the course in relevance to the related interdisciplinary aspects of the subject.
• To maintain balance between basic and applied research work in order to fulfil the needs of the society.
• To gain faith of the parents & society with redesigning of the course as per policies of the Government.

52. Future plans of the department.
• Recognition, evaluation and control of hazards.
• Impact of trace elements in human health.
• Environmental Impact assessment of habitats of animals due to pollution.
• Geoinformatic analysis of natural resources in Gwalior – Chambal region.
• Pollution studies on different ecosystems.
• Analysis of e-flow of rivers in the region particularly the Chambal River.
• Chronopharmacological studies with drugs influencing the autonomic regulation of colour changes.
• Melanophores as bio-indicator of aquatic pollution.
• Evaluation of maternal, placental or fetal immune system response to bacterial infection in pregnant females.
• Evaluation of perinatal immune response due to bacterial infection.
• To conduct research work on bee-hive products and to develop value added products for human welfare.
• To conduct research work on pharmaceutical significance (anti-inflammatory, anti-oxidant and antibacterial properties) of earthworm formulations.
• To conduct research work on health and healing properties of spirulina food products.
• Study of Inflammatory pathway, MAPK signalling pathway, Necrotic pathway, Apoptotic pathway, Oxidative stress and Fibrosis pathway.