Evaluative Report of the Department

1. Name of the Department : **Deptt. of Biophysics**

2. Year of establishment : **1964**

3. Is the Department part of a School/Faculty of the university? **Faculty of Science**

4. Names of programmes offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., D.Sc., D.Litt., etc.) **UG, PG, Ph.D. D.Sc.**

5. Interdisciplinary programmes and departments involved : **UG programme : Deptt. of Biochemistry, Microbiology, Chemistry, Physics, Statistics, Mathematics, Zoology & English**

6. Courses in collaboration with other universities, industries, foreign institutions, etc. **Research programmes (M.Sc. Part II & Ph.D.) in collaboration with PGIMER, IMTECH, CSIO and NIPER.**

7. Details of programmes discontinued, if any, with reasons : **Nil**

8. Examination System: Annual/Semester/Trimester/Choice Based Credit System **Semester**

9. Participation of the department in the courses offered by other departments **Subsidiary courses in UG programs of Biochemistry, Microbiology etc.**

10. Number of teaching posts sanctioned, filled and actual (Professors/Associate Professors/Asst. Professors/others)

	Sanctioned	**Filled**	**Actual (including (CAS & MPS)**
Professor	1	Nil	3
Associate Professors	3	Nil	Nil
Asst. Professors	8	6	**6**

11. Faculty profile with name, qualification, designation, area of specialization, experience and research under guidance. See **Annexure – 1**

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

13. Percentage of classes taken by temporary faculty – programme-wise information **30%**

14. Programme-wise Student Teacher Ratio : 1**7 : 1**

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

Category	Sanctioned	Permanent Filled	Number of Vacant Positions	Number of positions filled temporarily
Administrative Staff	7	5	2	2
Technical Staff	18	7	9	2

16. Research thrust areas as recognized by major funding agencies : **Cancer Biophysics, Neuro-biophysics, Molecular Biophysics**

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. **Annexure – II attached**

18. Inter-institutional collaborative projects and associated grants received : **Nil**

a) National collaboration b) International collaboration
only academic collaboration is being carried where research work based on inter-institutional collaboration has been published. The grant sanctioned is Nil so far.

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

20. Research facility / centre with **: Nil**

- state recognition
- national recognition
- international recognition

21. Special research laboratories sponsored by / created by industry or corporate bodies **Nil**

22. Publications:

- Number of papers published in peer reviewed journals (national / international) **180 (2008-2009 to 2012-2013)**
- Monographs
- Chapters in Books
- (in the year 2011-2012)
- Edited Books

- Books with ISBN with details of publishers

  Gupta, G.S., "Animal Lectins : Form, Function and Clinical Applications" (2012) Vol. I-II published by Springer

  Bansal, M.P., "Molecular Biology and Biotechnology : Basic Experimental Protocols" (2013)

  Bansal M.P. and Kaushal Nabeen "Oxidative Stress Mechanisms and their Modulation" In press (2014) published by Springer

- Number listed in International Database (For *e.g*. Web of Science, Scopus, Humanities International Complete, Dare Database - International Social Sciences Directory, EBSCO host, etc.)
- Citation Index – range / average 0 – 100
- SNIP
- SJR
- Impact Factor – range / average
- 4.0
- h-index

23. Details of patents and income generated : **Nil**

24. Areas of consultancy and income generated : **Nil**

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

Dr. Tranum Kaur received Post Doctoral Fellowship from Waterloo University, Canada

Dr. Avneet Saini has been awarded the prestigious international fellowship by the Schlumberger Foundation called the Faculty for the Future Fellowship for the year 2013-2014 to carry out Post Doctoral Research work at University College of London

26. Faculty serving in

a) National committees : Prof. Ashwani Koul (UGC)
b) 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**). Nil**

28. Student projects

- percentage of students who have done in-house projects including inter-departmental projects
  All M.Sc. Part- II students. Average 20 per year
- percentage of students doing projects in collaboration with other universities / industry / institute

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

- Faculty : **P.D.F. Abroad, Executive Council Member of National Scientific bodies.**
- Doctoral / post doctoral fellows **: 5**
- Students : **Best Poster Awards : 6**

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

UGC-SAP Sponsored National Symposium on Translational Research in Molecular Oncology, 2008

UGC – SAP sponsored National Symposium on Neurodegenerative Diseases, 2011

UGC-SAP sponsored National Symposium on recent trends in Cancer Research on March 18th, 2013

31. Code of ethics for research followed by the departments
Institutional Ethical Committee Clearance for animal studies

32. Student profile programme-wise:

Name of the Programme (refer to question no. 4)	**Applications Received**	**Selected**		**Pass percentage**	
		Male	Female	Male	Female
UG	81	23	48	66.66%	100%
PG	41	05	36	-	92.85%
Ph.D.	32	09	23	100%	100%

33. Diversity of students

Name of the Programme (refer to question no.4)	**% of students from the same university**	**% of students from other universities within the State**	**% of students From universities outside the State**	**% of students from other countries**
		50%	49%	1%

34. How many students have cleared Civil Services and Defense Services examinations, NET, SET, GATE and other competitive examinations? Give details category-wise. 2 students cleared NET for JRF in 2011-2012 and 2 for UGC CSIR (NET) for lectureship,

35. Student progression

Student progression	Percentage against enrolled
UG to PG	90%
PG to M.Phil.	-
PG to Ph.D.	20%
Ph.D. to Post-Doctoral	50%
• Campus selection • Other than campus recruitment	Nil
Entrepreneurs	1

36. Diversity of staff

Percentage of faculty who are graduates of the same university	60%
from other universities within the State	30%
from universities from other States from	10%
universities outside the country	

37. Number of faculty who were awarded M.Phil., Ph.D., D.Sc. and D.Litt. during the assessment period No. Faculties are already Ph.D. except one

38. Present details of departmental infrastructural facilities with regard to

a) Library **Available**

b) Internet facilities for staff and students **Available**

c) Total number of class rooms : **3**

d) Class rooms with ICT facility

e) Students' laboratories **4**

f) Research laboratories **4**

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

a) from the host institution/university **30**

b) from other institutions/universities **5**

40. Number of post graduate students getting financial assistance from the university.

41. Was any need assessment exercise undertaken before the development of new programme(s)? If so, highlight the methodology. **No**

42. Does the department obtain feedback from **Yes**

a. faculty on curriculum as well as teaching-learning-evaluation? If yes, how does the department utilize the feedback? **Syllabus update**

b. students on staff, curriculum and teaching-learning-evaluation and how does the department utilize the feedback?
Streamlining the administration

c. alumni and employers on the programmes offered and how does the department utilize the feedback**?** **New employment opportunity utilized**

43. List the distinguished alumni of the department (maximum 10)
No specific list is provided. However, more than 50 alumini are working as faculty/Post Doctoral fellow or pursuing Ph.D. in Europe, Australia and North America

44. Give details of student enrichment programmes (special lectures / workshops / seminar) involving external experts.
Attending the seminars outside the State

45. List the teaching methods adopted by the faculty for different programmes.
Conventional and audio-visual

46. How does the department ensure that programme objectives are constantly met and learning outcomes are monitored?
Large number of students are regularly reemployed outside.

47. Highlight the participation of students and faculty in extension activities.
Nil

48. Give details of "beyond syllabus scholarly activities" of the department.

The M.Sc. students do dissertation based on specific research topic. They carry intensive literature review and present seminars.

49. State whether the programme/ department is accredited/ graded by other agencies? If yes, give details.

50. Briefly highlight the contributions of the department in generating new knowledge, basic or applied.
Basic knowledge in Cancer, Neurobiology and Computational biophysics

51. Detail five major Strengths, Weaknesses, Opportunities and Challenges (SWOC) of the department.

Strength : Research, Teaching, Participation in National/International Conferences,
Strong base of alumini, Strong faculty in the core areas of Biophysics

Weakness : Very high student/Teacher Ratio
More laboratory space needed
More competent faculty in the emerging areas needed
Recognition of the subject in Schools & Colleges needed
Contingency money should be enhanced for laboratory expenses

Opportunities: Biophysics is a cutting edge interdisciplinary subject
Opportunities in research envisaged
Opportunities in drug discovery and therapeutics
Opportunities abroad for research and teaching
Opportunities in imaging and diagonistics research

Challenges : Being a modern subject the subject faces challenge from other contemporary disciplines.
High cost of equipments
More focus should be on Academic – Industry symbiotic relationship
Create more job opportunities
Sufficient challenges for absorbing in industry/research institutions

52. Future plans of the department.

1. Try to upgrade the Department to CAS programs of UGC.
2. Try to obtain financial assistance of higher level of DST-FIST programme
3. Strengthening the areas in research in Biomedical Engineering opportunities
4. Strengthen area in research in Theoretical Biophysics/Computing Biophysics/Molecular Modelling
5. Integrating in present research/faculty challenge with protomics/Genomics

Annexure - I

DEPARTMENT OF BIOPHYSICS,
PANJAB UNIVERSITY, CHANDIGARH

Name of Faculty	Qualification	Designation	Area of Specialization	Experience With years	No. Of Ph.D./M. Phil students guided for the last 4 years 2009-2013
Prof.D.K.Dhawan	Ph.D.	Professor	Radiation Biophysics	28 yrs.	7
Prof.M.L.Garg	Ph.D.	Professor	Biomolecular spectroscopy	27 yrs.	2
Prof.Ashwani Koul	Ph.D.	Professor & Chairperson	Cancer Phytomedicine	19 yrs.	1
Dr. Tranum Kaur	Ph.D.	Assistant Professor	Cancer Nanotechnology & Bioinformatics	8 yrs	-
Ms. Sarvnarinder Kaur	M.Sc.	Assistant Professor	Molecular Biology	7 yrs.	-
Dr. Avneet Saini	Ph.D.	Assistant Professor	Bioinformatics	3.8 yrs.	-
Dr. Tanzeer Kaur	Ph.D.	Assistant Professor	Proteomics & Nephrolithiasis	2.7 yr	-
Dr. Pavitra Ranawat	Ph.D.		Molecular Biology	1 yr.	-
Dr. Simran Preet	Ph.D.	Assistant Professor	Anti Microbial Peptides	1 yr.	-

Prof. Bimla Nehru	Ph.D.	Professor	Neuroscience	30 yrs.	1
Prof. S.N.Sanyal	Ph.D.	Professor	Cancer Cell and Molecular Biology	24 yrs	6
Prof. F.S. Nandel	Ph.D.	Professor	Molecular Spectroscopy and Molecular Modeling	30 yrs.	1

Annexure –II

RESEARCH SCHEMES

Sponsor	Title	Funds Sanctioned	Duration	PI and Research team
UGC-NET	Role of non-steroidal anti-inflammatory drugs in experimental colon cancer	11.7 lacs	2009-14	Prof. S.N.Sanyal, PI Vivek Vaish, SRF
UGC-NET	Studies on chemoprevention potential of lycopene in N-Nitrosodiethylamine Induced hepatic carcinogenesis in mice	11.5 lacs	2010-15	Prof. Ashwani Koul, PI Prof. M.P.Bansal, CI Prachi Gupta, SRF
RGNF UGC	Mechanistic Studies on Trimethyltin Induced neuronal damage in rat Brain : Neuromodulatory potentials of ginkgo Biloba and Gabapentin	11.3 lacs	2010-15	Prof. Bimla Nehru, PI Sukhwinder Kaur, JRF
ICMR-SRF	Role of non steroidal anti inflammatory drug in regulating beta catenin pathway of Cox-2 inhibition on signaling in DMH induced colon carcinogenesis in Rat model	8.4 lacs	2011-14	Prof. S.N.Sanyal, CI Pinky Sharma, SRF
ICMR-SRF	Chemoprevention of colon cancer by Piroxicam, a traditional non-steroidal anti-inflammatory drug and c-phycocyanin, a cyanobacterium derived cyclooxegenase-2 inhibitor	8.4 lacs	2011-14	Prof. S.N.Sanyal, PI Manpreet Kaur Saini,SRF
DST-INSPIRE	Chronic inflammation induced colon cancer and its chemoprevention by celecoxib	13.4 lacs	2011-15	Prof. S.N.Sanyal, PI Shruti setia, SRF
UGC-NET	Spectroscopic & Computational studies on structure of Metallothionin	10.0 lacs	2011-16	Prof. M.L.Garg, PI Prof. M.P.Bansal, CI Roobee Garla JRF
DST-INSPIRE	Mechanistic Studies on lycopene mediated chemoprevention of N-Nitrosodiethylamine induced hepatocarcinogenesis : Assessment of physiological & molecular markers	11.5 lacs	2011-16	Prof. Ashwani Koul, PI Prof. Baljinder Singh, CI Nisha Bhatia, JRF
UGC-RGNF	Evaluation of the radio-protective role of Aloe Vera against X-Ray Induced alterations	11.5 lacs	2011-16	Prof. Ashwani Koul, PI Prof. M.L.Garg, CI Shashi Bala, JRF

DST-SERB	Role of calnesin in hypeuoxluria induced oxidative imbalance in Renal tissue	14.47 lacs	2012-15	Dr. Tanzeer Kaur, PI Rishi Bhardwaj, Project Fellow
ICMR-SRF	Mechanistic Studies to unravel the Phytomodulatory potentials of Azadirachta indica against Murine skin cancer	8.37 lacs	2012-15	Prof. Ashwani Koul, PI Prof. M.P.Bansal, CI Dr. Neha Arora, SRF
ICMR-RA	Metal complexation of metallothionein and glutathione to understand the role of Zn in condition of As toxicity	7.02 lacs	2013-15	Prof. M.L. Garg, PI Dr. B.Mohanty, RA
ICMR	Molecular analysis of stress response kinases in testis and its isolated cell fractions after selenium deficiency induced oxidative stress in mice"	12.5 lacs	2013-15	Prof. M.P.Bansal, PI Prof. Ashwani Koul, CI
ICMR-SRF	Studies on the potential neuroprotective Mechanism of sodium salicylate in PD Following chronic exposure of rotenone	8.37 lacs	2013-16	Prof. B. Nehru, PI Poonam Thakur, SRF