

The 52nd meeting of the School Board of the School of Sciences was held on 8th May, 2015 at 11.00 a.m. in the Conference Room of Block D, IGNOU, Maidan Garhi, New Delhi – 110068.

The following members were present:

1. Prof. Vijayshri, Director (SOS), Chairperson
2. Prof. H. B. Srivastava, Centre of Advanced Study in Geology, Banaras Hindu University
3. Prof. Seemi Farhat Basir, Jamia Millia Islamia
4. Prof. T. K. Jena, SOHS, IGNOU
5. Prof. M. Parhar, STRIDE, IGNOU
6. Dr. Manoj Kulshreshtha, SOET, IGNOU
7. Prof. S.C. Garg, SOS, IGNOU
8. Prof. B.S. Saraswat, SOS, IGNOU
9. Prof. S.S. Hasan, SOS, IGNOU
10. Prof. Parvin Sinclair, SOS, IGNOU
11. Prof. Sunita Malhotra, SOS, IGNOU
12. Prof. Poornima Mital, SOS, IGNOU
13. Prof. Geeta Kaicker, SOS, IGNOU
14. Prof. Jaswant Sokhi, SOS, IGNOU
15. Prof. Neera Kapoor, SOS, IGNOU
16. Prof. Sujatha Varma, SOS, IGNOU
17. Prof. S.R. Jha, SOS, IGNOU
18. Prof. B. I. Fozdar, SOS, IGNOU
19. Prof. Amrita Nigam, SOS, IGNOU
20. Prof. M.S. Nathawat, SOS, IGNOU
21. Dr. S. Venkataraman, SOS, IGNOU
22. Dr. Kamalika Banerjee, SOS, IGNOU
23. Dr. Vijay Kumar Baraik, SOS, IGNOU
24. Dr. Sanjay Gupta, SOS, IGNOU
25. Dr. Seema Kalra, SOS, IGNOU
26. Dr. Kakoli Gogoi, SOS, IGNOU
27. Shri Prabhat Kumar Sangal, SOS, IGNOU

Prof. R.P. Tandon, Prof. S. Kumaresan, Prof. Rajender Parsad, Prof. K. Barik, Prof. J. A. Farooqi and Dr. Bano Saidullah could not attend the meeting.

At the outset, the Chairperson welcomed the members of the School Board and informed the Board about the academic achievements of the Faculty members of the School in the past one year as reported for the Annual Report of IGNOU. The School Board was informed that

- (i) two new Programmes, namely, the Post Graduate Certificate in Geoinformatics and the Post Graduate Diploma in Applied Statistics were launched in July, 2014 and January, 2015 sessions, respectively;
- (ii) the revision of the Certificate Programme in Laboratory Techniques was progressing at a satisfactory pace;
- (iii) the review of the B.Sc. programme had been initiated;
- (iv) the National Science day was celebrated on Feb. 27, 2015 (28th Feb., 2015 being a holiday) by holding a poster competition for all IGNOU students, organising an exhibition of the posters, science teaching aids, kits, toys and projects;
- (v) a panel discussion was organised on the topic “Women in/and Mathematics” on the occasion of International Women’s Day; and
- (vi) Master’s programmes in Physics and Chemistry were at different stages of planning and development.

In addition, Dr. Abdul Kareem, Assistant Professor in Biochemistry had been awarded the IASc- INSA-NASI Teacher Summer Fellowship for 2014, which had been availed by him at the National Institute of Plant Genome and Research, New Delhi. Eight research projects awarded by DST, CSIR, ICMR, ICSSR and SAC, ISRO were being executed by Faculty members in Life Sciences (2), Geography (3) and Geology (3). During this period, one book had been edited by Prof. Sunita Malhotra (Chemistry), one book had been co-authored by Prof. S. C. Garg (Physics) with Prof. Feroz Ahmed (Retd.), Dept. of Physics, University of Delhi and one book had been co-authored by Prof. M. S. Nathawat (Geography) with Ms. Suman Sinha (research scholar at Birla Institute of Technology, Mesra, Ranchi, and Dr. L.K. Sharma (Assistant Professor, Central University of Jharkhand). A total of 59 research papers [Biochemistry – 5, Chemistry – 17, Geography – 7, Geology – 6, Life Sciences – 15, Mathematics – 1 and Physics – 8] had also been published in various national and international journals by the Faculty members of the School. Faculty members had also presented 51 papers [Biochemistry – 6, Chemistry – 6, Geography – 26, Geology – 8 and Physics – 5] in various national and international Seminars and Conferences apart from delivering invited lectures and contributing chapters in books.

The School Board appreciated the academic contributions of the Faculty members.

Thereafter, the following items on the agenda were deliberated:

Item No. 1: To confirm the minutes of the 51st meeting of the School Board of the School of Sciences held on 16th February, 2015 and to note the action taken thereon.

SB 52.1.1 The School Board was informed that the Minutes of the 51st meeting of the School Board of the School of Sciences held on 16th February, 2015 were circulated to

members on March 24, 2015 after incorporating the comments of Prof. Parvin K. Sinclair and no comments had been received.

- SB 52.1.2 The Minutes of the 51st meeting of the School Board were confirmed as circulated on March 24, 2015.
- SB 52.1.3 The Action Taken Report was noted by the School Board.
- SB 52.1.4 A copy of the confirmed Minutes of the 51st meeting of the School Board held on February 16, 2015 (without Annexures) and the Action Taken Report are placed at **Annexures 1 and 2**, respectively.

Item No. 2: Matters arising from the minutes.

- SB 52.2.1 The following matter arising out of the Minutes was taken up:
- Prof Jaswant Sokhi, Course Coordinator of the Foundation Course in Science and Technology (FST), informed that difficulties were being faced by Regional Directors in recommending names of Academic Counsellors for FST in remote, rural and backward areas in accordance with the Guidelines approved by the School Board in its 51st meeting held on Feb. 16, 2015. In such areas, NGOs are running training institutions for various programmes, though no formal college like institutions are available. Even when Faculty in such organisations had requisite qualifications, they did not fulfil the condition of *minimum 2 years of teaching experience in a full-time position in a College or University* as approved by the School Board. After deliberating at length on the matter, the School Board decided that:
- “In exceptional circumstances and on the recommendation of the Course Team, the Director School of Sciences could approve the names of Academic Counsellors for BDP Study Centres situated in remote, rural and backward areas provided that due justification was placed on record by the Regional Director concerned.”

Item No. 3: To confirm the Minutes of the 12th Meeting of the Standing Committee of the School Board of the School of Sciences held on April 22, 2015.

- SB 52.3.1 The Minutes of the 12th meeting of the Standing Committee of the School Board held on April 22, 2015 were placed before the School Board for consideration and confirmation.
- SB 52.3.2 In respect of SBSC 12.3.1 and 12.3.2 of the Minutes, the School Board approved the proposed names with the advice that the names of Experts from the University system also be explored for designing and developing the course ‘Design and Analysis of Algorithms (MMTE-002)’ and the outcome reported in the next meeting of the School Board.
- SB 52.3.3 In respect of SBSC 12.5.2, the School Board approved the proposed names for cartographers with the advice that only M. A. in Geography be mentioned as the qualification of Sh. Mohd. Shahnawaz Khan.
- SB 52.3.4 In respect of SBSC 12.7.2, the School Board advised that the scholar Ms. Hemlata Maurya, Enrolment No. 112246536 in the Ph.D. (Mathematics Education)

Programme be informed by her Supervisors that she should try to complete her Ph.D. within the maximum period of five years, that is, December 2015 after which she would have to seek extension from the Vice Chancellor for a maximum period of one year.

SB 52.3.5 In respect of point no. 3 under SBSC 12.10.2, regarding non-submission of progress report by Shri Mukhtar Ahmad Wani, PhD scholar in Chemistry, the School Board decided that the scholar would not be granted exemption from submitting his progress report for the said period. Instead he should be advised to submit the progress report stating the reasons as to why no progress could be made. In respect of SBSC 12.10.4, it was advised that the name of the scholar Mr. Krishnaraj be added in the last sentence.

SB 52.3.6 In respect of SBSC 12.11.2, it was advised that regular internal presentations by full-time research scholars be made on a *monthly* basis.

SB 52.3.7 In respect of SBSC 12.13.3, some members of the School Board desired to know why the progress reports of students of Prof. P. Tripathi had been placed for the consideration of the Doctoral Committee, especially since she was no longer the internal supervisor. It was clarified by the Chairperson that the Research Programme Coordinators had only fulfilled their administrative responsibility as approved by the School Board in its 51st meeting held on Feb. 16, 2015. Prof. Neera Kapoor, one of the Research Programme Coordinators in Life Sciences, informed the Board that no action was initiated since the Minutes of the 51st Meeting of the School Board were to be confirmed. Now that the minutes had been confirmed, she assured the School Board that action to apprise the Vice-Chancellor of the circumstances would be initiated with the request to take a decision under Clause 15 of the Ordinance on the Research Degree Programme and permit the Programme Coordinators to provide administrative support to the PhD candidates concerned while the academic support could continue to be provided by Prof. P. Tripathi and the earlier approved joint external supervisor.

SB 52.3.8 With these observations and advice, the School Board confirmed the Minutes of the 12th meeting of the School Board Standing Committee. A copy of the confirmed Minutes (with its Appendices) is placed at **Annexure 3**.

Item No. 4: To report the approval of the Academic Council for the policy proposed by the School Board of the School of Sciences to devise a systemic mechanism for providing improved services and learning experiences in the laboratory courses offered by the School, and approve the feedback forms.

SB 52.4.1 The School Board was informed that in its 50th meeting, it had approved the policy proposal for devising a systemic mechanism for providing improved services and learning experiences in the laboratory courses offered by the School of Sciences. The policy proposal of the School Board was approved by the Academic Council in its 63rd meeting held on November 20, 2014 (extracts of the Minutes of the meeting of the Academic Council are enclosed at **Annexure 4a**).

The School Board had also recommended that the forms for general and course specific feedback be prepared by the same Committee that had been constituted by the Board to prepare the report on the matter. The feedback forms prepared by the Committee were placed before the School Board for consideration and approval.

SB 52.4.2 The School Board approved the forms with the following advice:

- i) A preamble be added to the forms. In point 5 of the general feedback form, the word 'timings' be replaced by the phrase "Time of conduct of lab." The specific subjects may be deleted from the table.
- ii) Point 6 of the course specific feedback form be rephrased as follows:

"Were appropriate instructions given to the students by the Counsellor in the beginning of the session, on the date of the visit?"
- iii) Point 11b be rephrased as follows:

"If Yes, wherefrom was the examiner invited _____,"
- iv) In Point 12, SED/HQ be replaced by RC.

SB 52.4.3 The modified general and course specific feedback forms on the conduct of the Lab. Courses as approved by the School Board are placed at **Annexures 4b and c**. The School Board authorized the Chairperson for taking necessary steps for the implementation of the policy in accordance with the decision of the Academic Council.

Item no. 5: To consider and approve the minutes of meetings of Course Design Committees for 3rd Level Geography Courses, namely, BGGE-001 and BGEE-003, held on 19th and 20th March, 2015 and recommend the names of additional Course Writers and Editors.

SB 52.5.1 The School Board was informed that Course Design Committee meetings for the two courses on **Geomorphology (BGGE-001)** and **Population Geography (BGGE-003)** to be offered at the third level of B.Sc. (Major) Programme in Geography were conducted on March 19 and 20, 2015, respectively.

The minutes of these meetings, the detailed syllabi of the courses, names of Editors and names of additional Course writers (**Annexures 5a and b**) were placed before the School Board for consideration and approval.

SB 52.5.2 While deliberating on the minutes of the meetings, members of the School Board desired to know the status of the development of 1st and 2nd level courses of the B.Sc. (Major) Programme in Geography. The Chairperson informed the Board of the status of the development of these courses as communicated by the Discipline Group Coordinator (**Annexure 5c**). The Chairperson also informed the Board that in the light of the information provided by the Discipline Group Coordinator

(Geography), the status of the courses reported in the 51st meeting (Vide SB 51.8.1) by members of the School Board from Geography Faculty (that the courses had been sent for translation) stood corrected.

SB 52.5.3 The School Board advised that the unitised syllabi of the two courses needed to be more comprehensive. The School Board further advised that another round of Course Design and Development Committee meetings be held for these two courses and detailed unit structure giving the sections and sub-sections be worked out.

SB 52.5.4 The list of editors for the B.Sc. (Major) Programme in Geography courses **Geomorphology (BGGE-001)** was approved. The names of the additional course writers for both these courses were recommended for the approval of the Vice-Chancellor. The lists of editors and additional Course writers are placed at Appendices to **Annexures 5a and b**, respectively.

Item No. 6: To consider and approve the minutes of the meeting of the Course Design Committee for Application Oriented Course on GIS for the Bachelor's Degree Programme held on April 21, 2015.

SB 52.6.1 The School Board was informed that the proposal for adding an Application-Oriented Course (AOC) on Geographical Information System (GIS) to the Bachelor's Degree Programme along with the names of Experts for the Course Design Committee was approved in the 51st meeting of the School Board of the School of Sciences held on February 16, 2015 vide SB 51.12.2. A meeting of the Course Design Committee for the AOC on GIS was held on April 21, 2015 to finalise the syllabus of the course. The minutes of the meeting and the syllabus of the course were placed for the approval of the School Board (**Annexure 6a**).

SB 52.6.2 While deliberating on the syllabus of the AOC on GIS, members of the School Board desired to know whether any pre-requisites were required for studying the course. The Course Coordinator informed and Experts from Geology in the School Board opined that no pre-requisites were required for this course. The Board advised the following:

- i) One paragraph outlining what the course was about, including employability aspects, may be written for the course while outlining the syllabus and the objectives may be spelt out clearly.
- ii) The number of lectures need not be mentioned in the syllabus.

With these observations, the syllabus of the course was approved by the School Board. The syllabus approved by the School Board is placed at **Annexure 6b**.

Item No. 7: To consider and approve the Phase Zero form for the Application Oriented Course on GIS for the Bachelor's Degree Programme.

SB 52.7.1 The School Board was informed that the proposal of adding an Application-Oriented Course (AOC) on Geographical Information System (GIS) to the Bachelor's Degree Programme along with the names of Experts for the Course Design Committee was approved in the 51st meeting of the School Board of the School of Sciences held on February 16, 2015 vide SB 51.12.2. Thereafter, a meeting of the Course Design Committee was held on April 21, 2015 to finalise the syllabus of the course. The Phase Zero form of the Application Oriented Course on GIS for the Bachelor's Degree Programme was placed for the consideration and approval of the School Board (**Annexure 7a**).

SB 52.7.2 While deliberating on the Phase Zero Form, the School Board advised the following:

- i) The Minutes of the Course Design Committee meeting held on April 21, 2015 be appended at point 8a and a brief account of the need assessment carried out by the Geology Faculty be appended at point 8b of the Phase Zero form.
- ii) In Table 1 under point No. 10, the proposed number of counselling sessions for theory component be changed to 5. In response to a query from a member of the School Board regarding the A/V resource requirement, the Course Coordinator explained that the video programmes produced for the Programme Post Graduate Certificate in Geoinformatics (PGCGI), on offer from the School, would also be used for this course. Under point 10b, the special infrastructure requirements at the Study Centres reflected at point 11(ii)(b) be mentioned.
- iii) Instead of one 8-credit course comprising 4 credits of theory component and 4 credits of practical component, two **separate courses** on GIS-Theory and GIS-Practical worth 4 credits each may be offered with the stipulation that **these should be taken together**. Accordingly, two separate Phase Zero Forms may be filled and submitted for further approval of the Academic Council.
- iv) Enough precaution should be taken to identify appropriate Study Centres in view of the particular requirements of this course.

SB 52.7.3 The Phase Zero forms for the two Application Oriented Courses on GIS-Theory and GIS-Practical for the Bachelor's Degree Programme as approved by the School Board are placed at **Annexures 7b and 7c**.

Item No. 8: To consider and approve the Phase Zero form for Pre-Ph.D. Courses for the Ph.D. (Biochemistry) programme.

SB 52.8.1 The School Board was informed that the Pre-Ph.D. coursework and mode of transaction and evaluation methodology for the Ph.D. programme in Biochemistry were designed in the Doctoral Committee meeting for Biochemistry held on January 9-10, 2014. Subsequently, the minutes of the Expert Committee meeting and the syllabi of the Pre-Ph.D. coursework were placed for consideration and approval in

the 49th meeting of the School Board of the School of Sciences held on April 28, 2014. The School Board had raised certain queries on transaction methods and evaluation methodology of the pre-PhD coursework and recommended that the advice of the Expert Committee be sought again. The revised transaction methods and evaluation methodology were approved in the 50th meeting of the School Board of the School of Sciences held on September 29, 2014 vide SB 50.36.3. The Phase zero form for the Pre-Ph.D. courses of Ph.D. (Biochemistry) programme (with Appendices 1 to 3) was placed for the consideration and approval of the School Board (**Annexure 8a**).

SB 52.8.2 While deliberating on the Phase Zero form, the School Board advised that the title of Course I should be Research Methodology instead of the proposed 'Research Methodology, Bioethics and IPR in conformity with the UGC guidelines. With this advice, the School Board approved the Phase Zero form for the Pre-Ph.D. courses of Ph.D. (Biochemistry) programme (with Appendices 1 to 3). The Phase Zero form approved by the School Board is placed at **Annexure 8b**.

Item no. 9: To consider and approve the Phase Zero form for the revised elective course in Linear Algebra in the revised structure of the Mathematics component of Bachelor's Degree Programme.

SB 52.9.1 The School Board was informed that the Phase Zero form of the course on Linear Algebra was placed in the 51st Meeting of the School Board held on February 16, 2015. The School Board had then advised that a more detailed summary of the feedback obtained from all stakeholders should be presented including the topics which were found to be difficult by learners. The Board further recommended that more detailed information than given in the Phase Zero Form may be provided about the proposed A/V resources, web-mediated and IRC components.

Accordingly, the modified Phase Zero form of the revised course Linear Algebra in the revised structure of the Mathematics component of Bachelor's Degree Programme was placed before the School Board for consideration and approval (**Annexure 9**).

SB 52.9.2 While deliberating on the Phase Zero form, members of the School Board desired to know the details of the feedback obtained from various stakeholders presented in the Appendix to the Phase Zero form. Dr. S. Venkataraman, Course Coordinator, informed the School Board that feedback had been obtained a few years ago from some students. Besides, over a period of time, interaction with students, Academic Counsellors and peers from the conventional system had provided some feedback on the difficulties faced by distance learners in studying the course. Members of the School Board felt that the feedback being reported was scanty. However, members of the School Board from Mathematics and the Chairperson explained that this particular course was found to be difficult by a significant number of learners. The Chairperson stressed that the revision of this course was long overdue and needed to be expedited to mitigate the difficulties of the learners in completion of the programme.

SB 52.9.3 Members of the School Board also observed that the essential qualification for the Academic Counsellors for the course had been proposed as M.Sc./M.A. in Mathematics with at least 5 years of experience in teaching Linear Algebra at the UG level in any recognised institution/university, whereas the qualification for the Academic Counsellors of FST had been approved in the 51st meeting of the School Board vide SB 51.5.3 as Ph.D. with two years of teaching experience in a full time position in a College/University. This exhibited inconsistency in prescribing the qualifications for Academic Counsellors of the same programme.

Members of the School Board from Mathematics explained that it was difficult to get teachers holding Ph.D. Degree in Mathematics as Academic Counsellors for IGNOU. It would be possible to get Academic Counsellors for the course if the essential qualifications were to be kept as proposed without compromising on the quality of counselling. The Chairperson proposed that the Board could review the guidelines for appointing Academic Counsellors of FST in its next meeting and requested that the Phase Zero form be approved as proposed.

SB 52.9.5 The School Board approved the Phase Zero form (**Annexure 9**) of the revised course Linear Algebra in the revised structure of the Mathematics component of Bachelor's Degree Programme.

Item No. 10: To consider and approve the proposed uniform evaluation methodology for entrance tests and assessment of pre-PhD course work for the PhD programmes of the School of Sciences.

SB 52.10.1 The School Board was informed that the School Board in its 50th Meeting held on September 29, 2014 had set up a Committee to prepare a uniform evaluation methodology for the entrance tests and pre-Ph.D. course work of Ph.D. Programmes being offered by the School. The report of the Committee was placed before the School Board (**Annexure 10**). The School Board was further informed that in the Ph.D. (Mathematics Education) Programme, a Project course worth 6 credits was also offered as a part of the Pre-Ph.D. coursework.

The assessment of the Project course comprises the following components:

Field Work : 20%

Project Report : 50%

Presentation and Viva-voce : 30%

The pass marks are 50% in each component and it is essential to pass all components separately.

SB 52.10.2 While deliberating on the report of the Committee, the School Board advised that detailed guidelines for assessing the performance of the candidates in the interview should also be framed by the same Committee which had prepared this report. The School Board also nominated the following experts as members of the Committee:

1. Prof. Seemi Farhat Basir, Jamia Millia Islamia
2. Prof. A.K. Bhatnagar, UGC Emeritus Professor, IGNOU

The assessment of the candidates' performance in the interview may include assessing the abilities of the candidates of writing a research proposal in any area of research of their interest and presenting it before the interview board. The School Board also recommended that question banks be created for Entrance Tests and assessment of pre-Ph.D. coursework, and technology be used for evaluation of the answer scripts.

SB 52.10.3 With these observations, the School Board approved the uniform evaluation methodology for the written part of the entrance tests and assessment of pre-PhD course work for the PhD programmes of the School of Sciences proposed in the report (**Annexure 10**).

Item No. 11: To devise a framework for organising research work in the School of Sciences.

SB 52.11.1 The School Board was informed that vide Statute 10A (iv) of the IGNOU Act, 1985, it had the power to "organise the developmental and research work in the School". The Chairperson apprised the School Board of the diversity of the ways in which the Ph.D. Programmes in the School of Sciences were being organised and conducted. It was proposed that a Committee be constituted by the School Board to delineate an overall framework and a set of uniform guidelines for organising and undertaking research work in the School.

SB 52.11.2 The School Board approved the following Committee for this purpose:

1. Prof. Vijayshri, Director, School of Sciences - Chairperson
2. Prof. Seemi Farhat Basir, Jamia Millia Islamia
3. Prof. A.K. Bhatnagar, UGC Emeritus Professor, IGNOU
4. Dr. Seema Kalra, Biochemistry
5. Dr. Maneesha Pandey, Biochemistry
6. Prof. Sunita Malhotra, Chemistry
7. Dr. Kamalika Banerjee, Chemistry
8. Dr. Meenal Mishra, Geology
9. Dr. M. Prashanth, Geology
10. Dr. Vijay Kumar Baraik, Geography
11. Prof. Neera Kapoor, Life Sciences
12. Dr. Bano Saidullah, Life Sciences
13. Prof. Sujatha Varma, Mathematics Education
14. Dr. Deepika, Mathematics
15. Dr. Manish Trivedi, Statistics
16. Dr. S. Lamba, Physics (Convenor)

The terms of reference of the Committee would be to frame guidelines for organising and undertaking research work in the School of Sciences including the process of admission, identification of supervisors, conduct of pre-Ph.D. course

work, undertaking research, submission of progress reports, submission of Ph.D. thesis, etc.

Item No. 12: To consider and approve the names of external examiners for the evaluation of the Ph.D. thesis of Mr. Prateek Tyagi (Enrol. no. 118701648) on the topic “Synthesis, Characterization and Theoretical Study of some Transition Metal Complexes of later 3d Metals and Schiff Base Ligands” working under the joint supervision of Prof. B. S. Saraswat and Dr. Sulekh Chandra.

SB 52.12.1 For the sake of confidentiality, the list of examiners of the Ph.D. thesis of Mr. Prateek Tyagi, Ph.D. Scholar (Enrolment No. 118701648) working under the joint supervision of Prof. B. S. Saraswat and Dr. Sulekh Chandra on the topic ““Synthesis, Characterization and Theoretical Study of some Transition Metal Complexes of later 3d Metals and Schiff Base Ligands” was read out for the approval of the School Board.

The details of **Mr. Prateek Tyagi, Ph.D. Scholar (Enrolment No. 118701648)** are as under:

1. **Name of the Student:** Prateek Tyagi
2. **Enrolment No.:** 118701648
3. **Date of Registration:** February 29, 2012
4. **Topic of the thesis:** Synthesis, Characterization and Theoretical Study of some Transition Metal Complexes of later 3d Metals with Schiff Base Ligands
5. **Supervisors:**
Prof. B S Saraswat, Internal Supervisor, and
Dr. Sulekh Chandra, Associate Professor, Dept. of Chemistry, Zakir Hussain College, University of Delhi, JLN Marg, New Delhi-110002
6. **Date of Pre- Ph.D. thesis submission seminar before the Doctoral Committee: Last week of April (before the meeting of the School Board):** 7th May, 2015
7. **Number of publications: 2**
 - i) Synthesis, spectroscopic characterization, thermal, DFT studies and anticancer activity of Ni(II) and Zn(II) complexes of 2-((thiophen-2-ylmethylene) amino) benzamide, Prateek Tyagi, Sulekh Chandra and B. S. Saraswat, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 134(2015)200-209.
 - ii) Design, spectral characterization, DFT and biological studies of transition metal complexes of Schiff base derived from 2-aminobenzamide, pyrrole and furan aldehyde, Prateek Tyagi, Sulekh Chandra, B.S. Saraswat and Deepansh Sharma, Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy, 143(2015) 1–11.

SB 52.12.2 The School Board approved the list of examiners and advised that the approved list of examiners should not be circulated as a part of the Minutes but be forwarded confidentially to the Research Unit.

Item No. 13: To consider and approve the names of external examiners for the evaluation of the Ph.D. thesis of Mr. Sachin Kumar (Enrol. No. 122877862) on the topic "*Molecular Characterization of Circulating Influenza Viruses*" working under the joint supervision of Dr. Bano Saidullah and Dr. Arvind Rai.

SB 52.13.1 For the sake of confidentiality, the list of examiners of the Ph.D. thesis of Mr. Sachin Kumar, Ph.D. Scholar (Enrolment No. 122877862) working under the joint supervision of Dr. Bano Saidullah and Dr. Arvind Rai on the topic "*Molecular Characterization of Circulating Influenza Viruses*" was read out for the approval of the School Board.

The details of **Mr. Sachin Kumar, Ph. D. Scholar (Enrolment No. 122877862)** are as under:

1. **Date of Registration : 2012**
2. **Topic:** Molecular characterization of circulating Influenza viruses
3. **Supervisor:** Dr. Bano Saidullah
Associate Professor, Life sciences, School of Sciences, IGNOU
New Delhi-110068

and

Dr. Arvind Rai,
Joint Director and Head, Division of Biotechnology,
NCDC, Sham Nath Marg, Delhi-110 054
Mobile: 09810385357
4. **Date of Pre-Ph.D. thesis submission seminar before Doctoral Committee:** 7thApril, 2015.
5. **Number of Publications : 2**
 - (i) Sachin Kumar, Shashi Khare, Bano Saidullah, Inderjeet Gandhoke, Hanu Ram, Supriya Singh, L.S. Chauhan, Arvind Rai (2014), Appearance of L90I and N205S Mutations in Effector Domain of NSI Gene of pdm (09) H1N1 Virus from India during 2009-2013, *Advances in Virology*. Vol. 2014.1-13.
 - (ii) Sachin Kumar, Shashi Khare, Bano Saidullah, Inderjeet Gandhoke, Hanu Ram, Supriya Singh, L.S. Chauhan and Arvind Rai (2014), Molecular Characterization on the basis of HA, NA and M gene revealed changes in critical amino Acid positions of influenza a (H3N2) virus circulating in India during 2011-2013, *American Journal of Infectious Diseases*, Vol. 10 (3), 118-131.

SB 52.13.2 The School Board approved the list of examiners and advised that the approved list of examiners should not be circulated as a part of the Minutes but be forwarded confidentially to the Research Unit.

Item No. 14: To consider and approve the minutes of the Doctoral Committee meeting for Chemistry held on May 7, 2015.

SB 52.14.1 The School Board was informed that a meeting of the Doctoral Committee for Chemistry was held on May 7, 2015 to assess the pre-Ph.D. thesis submission seminar of Mr. Prateek Tyagi, Ph.D. Scholar in Chemistry (Enrolment No. 118701648) working under the joint supervision of Prof. B. S. Saraswat and Dr. Sulekh Chandra on the topic *“Synthesis, Characterization and Theoretical Study of some Transition Metal Complexes of later 3d Metals and Schiff Base Ligands”*. The Doctoral Committee found the pre-Ph.D. thesis submission seminar of Mr. Prateek Tyagi to be satisfactory and recommended that he be allowed to submit his Ph.D. thesis.

SB 52.14.2 The School Board approved the Minutes of the Doctoral Committee meeting for Chemistry held on May 7, 2015 (**Annexure 11**).

Item no. 15: Any other Items with the permission of the Chair.

No item was taken up under any other matter.

The meeting ended with a vote of thanks to the Chair.


(Vijayshri)
Chairperson

List of Annexures

Annexure 1	Minutes of the 51st meeting of the School Board of the School of Sciences
Annexure 2	Action Taken Report on the minutes of 51st meeting of the School Board of the School of Sciences
Annexure 3	Minutes of the 12th Meeting of the Standing Committee of the School Board of the School of Sciences with Annexures
Annexure 4a	Extracts of the Minutes of the 63 rd meeting of the Academic Council held on November 20, 2014
Annexures 4b and c	General and Course Specific Feedback Forms approved by the School Board
Annexures 5a and b	Minutes of meetings of Course Design Committees for 3rd Level Geography Courses, namely, BGGE-001 and BGEE-003 held on 19th and 20th March, 2015 and list of the additional Course Writers and Editors
Annexure 5c	Status of the development of 1st and 2nd level courses of the B.Sc. (Major) Programme in Geography
Annexure 6a	Minutes of the meeting of the Course Design Committee for Application-Oriented Course (AOC) on Geographical Information System (GIS) for the Bachelor's Degree Programme held on April 21, 2015
Annexure 6b	Syllabus of the Application-Oriented Course (AOC) on Geographical Information System (GIS) approved by the School Board
Annexure 7a	Phase Zero form of the Application-Oriented Course (AOC) on Geographical Information System (GIS) for the Bachelor's Degree Programme
Annexures 7b and 7c	Phase Zero forms for the two Application Oriented Courses on GIS-Theory and GIS-Practical for the Bachelor's Degree Programme as approved by the School Board
Annexure 8a	Phase zero form for the Pre-Ph.D. courses of Ph.D. (Biochemistry) programme (with Appendices 1 to 3)
Annexure 8b	Phase Zero form for the Pre-Ph.D. courses of Ph.D. (Biochemistry) programme (with Appendices 1 to 3) approved by the School Board
Annexure 9	Phase Zero Form of the revised course Linear Algebra in the revised structure of the Mathematics component of Bachelor's Degree Programme
Annexure 10	Report of the Committee to prepare a uniform evaluation methodology for the entrance tests and pre-Ph.D. course work of Ph.D. Programmes being offered by the School
Annexure 11	Minutes of the Doctoral Committee meeting for Chemistry held on May 7, 2015