**2.6.2 - Attainment of Programme outcomes, Programme specific outcomes and course outcomes are evaluated by the institution during the year**

HBNI is a Research University established by DAE as an academic tool to develop indigenous strengths in nuclear science and technology. HBNI and DAE have been closely monitoring the results of the academic programs to assess whether the mandates have been met by the programs. Parameters such as publications in journals and development of new processes and products for the Department’s program and for societal needs have been taken as broadly indicative of the attainment of the objectives of the academic program. In the context of HBNI as a Deemed University, the methodology to be adopted for measuring the level of attainment of POs, PSOs and COs in quantitative terms was discussed in the IQAC, and based on its suggestions, a methodology based on the aggregate percentage of marks/CGPA was adopted for the measurement, except for the Research Orientated Programmes. It was decided to consider all POs, PSOs and COs in the particular programme to be of equal weightage and the attainment level in POs, PSOs and COs as equal to the programme level attainment. The programme level attainment on the scale of 1 to 3 was approved with the following methodology for calculation of level attainment for the programmes, in which the aggregate percentages are awarded.

Minimum pass % ≤ aggregate % < Minimum pass % + 5%, then Level=1

Minimum pass % + 5% ≤ aggregate % < Minimum pass % + 10%, then Level=2

Minimum pass % + 10% ≤ aggregate %, then Level=3

For the programmes in which grade point average system on a ten-point scale is implemented, the below mentioned level attainment formula was approved.

Qualifying CGPA to pass ≤ CGPA obtained < Qualifying CGPA +1, then Level=1

Qualifying CGPA +1 ≤ CGPA obtained< Qualifying CGPA +2, then Level=2

Qualifying CGPA +2 ≤ CGPA obtained, then Level=3

Program level attainment = ∑ niLi /N, where ni is the number of students attaining the Level ‘i’ and ‘N’ is the total number of students in the programme.

% Program level attainment = (Program level attainment/3) x100

Research orientated programmes, such as M.Sc.(Engg), M.Phil., Integrated Ph.D. and Ph.D., are expected to impart advance knowledge in theory and experimental/computational techniques in the domain and related areas of the research problem, and development of analytical and critical thinking skills for solving complex applied/fundamental problems. Attainment of the non-research aspects is judged during the course work, practical and viva voce for M.Sc.(Engg) and M. Phil students. The Ph.D. students are judged at various stages by Oral General Comprehensive Examination, the number and quality of publications in conferences and refereed journals, pre-synopsis viva, and thesis examination by two external examiners. For all the research-orientated programmes, the degree is awarded only after the thesis work is successfully defended. Due to stringent criteria for passing the various performance assessment tests, all the degree holders in this category can be considered to have obtained the program attainment of 100%.