PROFORMA OF EVENT

1. Name of the Department-**PHYSICS**
2. Event- **INTER DEPARTMENTAL SEMINAR**
3. Date-**22.12.2016**
4. Title of the topic-**Magnetic Phase Transition**
5. Name & Designation of Resource Person:-

Mr. Brahmananda Sethi
Lecturer in Physics (HOD)
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6. **Report-**: The transition from the paramagnetic state into the magnetically ordered state entails a transition from one magnetic group into another. The existence of magnetic order appearing in materials below a particular ordering temperature (e.g. the Curie temperature, T_C or the Neel temperature, T_N) points to a class of physical phenomena which are described as magnetic phase transitions. The thermodynamics of these phase transitions can be described by energy functions expressed in terms of intensive or extensive variables, in terms of magnetization −temperature ($M - T$) phase diagrams, or in terms of critical exponents that describe the variation of thermodynamic properties (as a function of the order parameter) as the ordering temperature is approached. In this seminar the thermodynamics of magnetic ordering transitions, critical exponents, and thermodynamic variables are described. Magnetic phase transitions within the framework of the mean field theory of phase transitions with discussion of several magnetic equations of state are presented. Besides the magnetic phase transition from the disordered into the ordered state, there exist transitions from one magnetic structure into another. Those of these that are obtained by a rotation of the ferromagnetic or antiferromagnetic vector relative to the crystallographic axis are called reorientation transitions. The magnetic spins of a magnetic material, e.g., nickel, interact with each other: the energy is lower if the two spins on adjacent nickel atoms are parallel than if they are antiparallel.

7. **Other remark:** The seminar on the topic "Magnetic Phase Transition" was presided by the science stream senior faculty members Prof. Jyostna mayee Pati (HOD) Department of mathematics & Prof. Jayashree Behera (HOD) Department of education. The seminar topic was discussed from various angels so that it will be fruitful to UG & PG students. In this inter departmental seminar, students and teacher interaction was very nice. At the end of seminar the vote of thanks was given by first year Hon's student Miss. Swapna Rout. Other staff members of physics department gave their efforts to make the seminar a grand success.

Mr. Brahmananda Sethi
(HOD) of Physics.