DECLARATION BY THE CANDIDATE

I, Mandeep Kaur, hereby declare that the subject matter in this thesis entitled, "**Arithmetic properties of a partition function, vanishing coefficients in infinite product expansions and relations between sums of squares and triangular numbers**," is the record of work done by me, that the contents of this thesis did not form basis of the award of any previous degree to me or to the best of my knowledge to anybody else, and that the thesis has not been submitted by me for any research degree in any other university/institute.

This thesis is being submitted to the Tezpur University for the degree of Doctor of Philosophy in Mathematical Sciences.

Place: Tezpur.

Date: **Signature of the candidate**