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Date. 9/05/13

### CERTIFICATE

*This is to certify that Mr. Vivek Kumar Sharma has worked under my supervision for the degree of Doctor of Philosophy in Mathematics of Veer Bahadur Singh Purvanchal University Jaunpur (U.P.) on the topic entitled, "Some studies on shock wave propagation in the atmosphere of the earth and stars". The findings contained in this thesis are original and have not been submitted elsewhere in India or abroad for the award of Ph.D degree.*

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