

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCE
PILANI (RAJASTHAN) INDIA

CERTIFICATE

This is to certify that, the thesis entitled " Intelligent Ant Systems and Application to Train Scheduling Problem" submitted by Mr. **RAGHAVENDRA G. S.**, ID No. **2005PHXF428G** for the award of Ph.D degree of the institute embodies original work done by him under my supervision.



Signature of the Supervisor

Name: Prof. Prasanna Kumar N

Department of Mathematics.

Date: 19/04/13