



### Undertaking from the Candidate

I, **Piyush Choudhary**, declare that I have pursued my research work under the supervision of Prof (Late). Som Nath Mahendra from February 2012 to April 2017 and Prof. Rakesh Kumar Srivastava from May 2016 to March 2018. I hereby submit my thesis entitled "**Effective Usage of Renewable Energy for Engineering Systems**"–**Optimization of Solar Energy in Indian Oil and Gas Sector**" for the award of Ph.D. degree.

Date: 09th March 2018

Place: Varanasi

(Piyush Choudhary)



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**Annexure-F**

**Pre-Submission Seminar Completion Certificate**

This is to certify that Mr. Piyush Choudhary (Roll no. 11604EN006; Enrollment No. 342209), a bonafide research scholar of the department has successfully completed the Ph.D. Pre-Submission Seminar on the topic **"Effective Usage of Renewable Energy for Engineering Systems" – Optimization of Solar Energy in Indian Oil and Gas Sector** on 04<sup>th</sup> Oct 2017 (Wednesday), in partial fulfillment of the requirement of Ph.D. Programme.

Date: 09 March 2018

Place: Varanasi

(Head of the Department)

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Annexure-G

### Copyright Transfer Certificate

Title of the Thesis: "Effective Usage of Renewable Energy for Engineering Systems"-Optimization of Solar Energy in Indian Oil and Gas Sector

Candidate's Name: Piyush Choudhary

#### Copyright Transfer

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09 March 2018

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