

## **CANDIDATE'S DECLARATION**

I Shashi Sharma, certify that the work embodied in this Ph.D. thesis is my own bonafide work carried out by for a period of from 15 February 2018 to 15 February 2021 at the School of Computing Skills, Bhartiya Skill Development University. The matter embodied in this Ph. D. thesis has not been submitted for the award of any other degree/diploma.

I declare that I have faithfully acknowledged, given credit to and referred to the research workers wherever their works have been cited in the text and the body of the thesis. I further certify that I have not willfully lifted up some other's work, para, text, data, results, etc. reported in the journals, books, magazines, reports, dissertations, theses, etc., or available at web-sites and included them in this Ph. D. thesis and cited as my own work.

Date:

(Signature and Name of candidate)

Place: Jaipur

## **CERTIFICATE FROM THE SUPERVISOR/CO-SUPERVISOR**

This is to certify that the above statement made by the candidate is correct to the best of my/our knowledge. The research work embodied in the thesis was carried out under my/ our supervision and that the candidate has worked under me/ us for the period required under the regulations.

**Co-Supervisor's signature**

Prof. Kumkum Garg  
Professor of Computing Skills

**Supervisor's signature**

Dr. Soma Kumawat  
Assistant Professor