Certificate

This is to certify that the project report entitled **Optimizing the vehicle routing problem using genetic algorithm with local refinement** submitted to University of Kalyani in fulfilment of the requirement for the award of the degree of Master of Science (M.Sc) in Computer Science, Part-II 2nd semester is carried out by **Pranab Kumar Paul (Registration No: 2080001 of 2021-2022, Roll No: 90/MCS/210008** under my supervision and guidance. In my opinion, the report in the present form is in compliance with the requirement, as specified by the Dept. of Computer Science and Engineering and as per the regulation of University of Kalyani. To the best of my knowledge, the results included in the report are original and worthy of incorporation in the present version of the report for the Master of Science Program in Computer Science.

Signature of Supervisor   Signature of H.O.D
Dr. P.R.S. Mahapatra   Dr.Kalyani Mali
Professor   Professor
Dept. of Computer   Dept. of Computer
Science and Engineering   Science and Engineering
University of Kalyani   University of Kalyani
Kalyani, Nadia   Kalyani, Nadia

Date:
Place: Kalyani   Signature of External Examiner